APPENDIX 4.14

Preliminary Geotechnical Report

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PRELIMINARY GEOTECHNICAL INVESTIGATION
PROPOSED KAISER PROPERTY REDEVELOPMENT
KIELEY BOULEVARD
SANTA CLARA, CALIFORNIA

PREPARED FOR:
FF DEVELOPMENT, L. P.
5520 MOREHOUSE DRIVE, SUITE 200
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CTE JOB NO. 20-1926

JULY 6, 2007

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FF Development, L.P.
5520 Morehouse Drive, Suite 200
San Diego, California 92121

Attention: Mr. Ed McCoy

Subject: Preliminary Geotechnical Investigation
Proposed Kaiser Property Redevelopment
Kiely Boulevard
Santa Clara, California

Dear Mr. McCoy:

In accordance with your request and authorization, Construction Testing and Engineering, Inc. has prepared this preliminary geotechnical investigation report for the proposed redevelopment of the existing Kaiser Hospital property located along Kiely Boulevard in Santa Clara, California. The attached report discusses the findings and conclusions of our geotechnical investigation and provides preliminary geotechnical recommendations for use during project design and construction. The project is considered feasible, from a geotechnical viewpoint, provided the recommendations presented in this report are incorporated into the design and construction of the project.

If you have any questions regarding our findings or recommendations, please do not hesitate to contact this office. The opportunity to be of service is appreciated.

Respectfully submitted,

CONSTRUCTION TESTING & ENGINEERING, INC.

Robert R. Russell, GE #2042
Principal Engineer

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1.0 EXECUTIVE SUMMARY

Our investigation was performed to provide preliminary geotechnical information for the proposed redevelopment of the existing Kaiser Hospital property located along Kiely Boulevard in Santa Clara, California. We understand that the proposed development is likely to consist of two stories of multi-family units over a ground floor commercial use. The development may also include subterranean parking. Normal infrastructure including pavement, exterior flatwork, utilities, and landscaping is also planned. We anticipate the structures will be steel-framed and supported on shallow continuous and spread footings.

Based on our investigation and review of geologic maps, the site is underlain by alluvial soils. Groundwater was encountered at depths ranging from about 12 to 17 feet within four of the borings at the time of our investigation. Groundwater levels will likely fluctuate during periods of high precipitation. Dependent upon the depth of any subterranean parking garage, groundwater may impact the proposed construction.

The site is located within an area designated as possessing a potential for liquefaction. However, due to the high clay content and plasticity of the majority of the soils, the site is deemed as not possessing a significant liquefaction potential.

2.0 INTRODUCTION AND SCOPE OF SERVICES

2.1 Introduction

Construction Testing and Engineering, Inc. (CTE) has prepared this preliminary geotechnical engineering report for FF Development, L.P. Presented herein are the results of the subsurface investigation performed as well as recommendations regarding the geotechnical engineering and dynamic loading criteria for the proposed development.

The proposed project will consist of the demolition of the existing Kaiser Hospital improvements followed by construction of three-story mixed use (multi-family and commercial) structures along with normal infrastructure including pavement, exterior flatwork, underground utilities, and landscaping. The proposed structures (number unknown) are anticipated to be steel-framed and supported on shallow continuous and spread footings, possibly with some subterranean parking. Although structural loading information was not available, we have assumed maximum column and wall loads of 250 kips and 6 kips per foot, respectfully. Although grading plans have not yet been prepared, site grading is expected to include a maximum depth of cut and fill of approximately 5 feet, not including the subterranean parking.

2.2 Scope of Services

Our scope of services included:

- Review of readily available geologic information and prior adjacent geotechnical studies.

- Explorations to determine subsurface conditions to the depths influenced by the proposed construction.
- Laboratory testing of representative soil samples to provide data to evaluate the geotechnical design characteristics of the site foundation soils.
- Definition of the general geology and evaluation of potential geologic hazards at the site.
- Preparation of the report detailing the investigation performed and providing conclusions and geotechnical engineering recommendations for design and construction.

3.0 SITE LOCATION AND DESCRIPTION

The site is located northwest of the intersection of Kiely Boulevard and Homestead Road in Santa Clara, California. The site is currently developed with a Kaiser Hospital facility which includes a main 6-story hospital building along with several other associated support structures. The majority of the remaining portion of the site is pavement with asphalt pavement. The topography in the vicinity of the site is relatively flat and slopes slightly downward to the northeast.

4.0 FIELD AND LABORATORY INVESTIGATION

4.1 Field Investigations

The field exploration, performed on June 12 and 13, 2007, included a site reconnaissance, the excavation of 9 exploratory borings and *in-situ* testing of subsurface deposits. The soil borings were excavated to investigate and obtain samples of the subsurface soils at the project site. The borings (designated B-1 through B-9) were excavated using a truck-mounted four-inch diameter, solid flight auger drill rig to a maximum explored depth of approximately 46½ feet below the existing surface.

Soils encountered within the borings were classified in the field during the exploration operations in accordance with Unified Soil Classification System. The field descriptions were later modified (as appropriate) based on the results of our laboratory-testing program. In general, soil samples were obtained at 2-1/2 to 5-foot intervals with standard split spoon (SPT and Cal Modified) samplers. Specifics of the soils encountered can be found in the Boring Logs, which are presented in Appendix B.

4.2 Laboratory Investigation

Laboratory tests were conducted on representative soil samples to evaluate their physical properties and engineering characteristics. Specific laboratory tests included: maximum dry density and optimum moisture content, in-place moisture and density, expansion index, consolidation/collapse potential, direct shear, plasticity, grain-size distribution and chemical analyses. These tests were conducted to determine the material strength, compressibility/collapse potential, physical properties, and corrosivity of the on-site soils. Test method descriptions and laboratory results are presented in Appendix C. Due to the timing of the issuance of this report, the direct shear and consolidation testing was not completed and those results will be issued as an addendum once completed.

5.0 GEOLOGY

5.1 Geologic Setting

The site lies within the generally northwest-trending Santa Clara Valley. Locally the topography slopes to the north. The Santa Clara Valley is a topographic depression formed between elements of the Coast Ranges. The site area is comprised of coalescing broad, low-lying alluvial fans between Coyote Creek and the Guadalupe River which flow parallel one another northwesterly into tidal flats along the southern end of the San Francisco Bay. Coyote Creek originates from the Diablo Range and the Guadalupe River from Santa Cruz Mountains.

5.2 Site Geologic Conditions

Based on our investigation and review of geologic maps, the site is underlain by alluvial fan deposits which extended to the maximum depth explored (46.5 feet). Below is a brief description of the soils encountered during the investigation. More detailed descriptions are provided in the Boring Logs in Appendix B.

5.2.1 Undocumented Fill

Although undocumented fill deposits were not encountered within the borings (not including the pavement section), we anticipate that some undocumented fill may be present beneath and adjacent to the existing buildings.

5.2.2 Alluvial Fan Deposits (Qhf/Qhl)

Alluvial fan deposits were encountered beneath the existing pavement section within all borings and extended to the maximum depth explored. The alluvium generally consisted of a stiff to hard consistency silty to sandy clay, a medium dense clayey sandy fine gravel and a medium dense silty fine to coarse sand.

5.3 Groundwater Conditions

Groundwater was encountered in four of the exploratory borings at depths ranging from approximately 12 to 17 feet. Groundwater elevations typically fluctuate on a seasonal basis due to changes in precipitation, irrigation, pumping, etc. Based on a review of the Historic High Groundwater Contour Map (Seismic Hazard Zone Report 058, 2002), the depth to historic high groundwater at the site is approximately 20 feet. The shallower groundwater depths encountered in the borings may be an indicator that the site is subject to shallow perched water conditions.

Groundwater levels are expected to be subject to seasonal fluctuation and changes of surface water levels in nearby creaks/rivers. Conservatively, a groundwater level of 10 feet is considered reasonable for evaluation analysis and/or construction performed within the wet season. It cannot be precluded that thicker clay layers may extend below and confine the groundwater level. Under such conditions excavations that extend to/or near the base of the clay could encounter groundwater under head and associated dewatering difficulties.

If excavations (e.g., for subterranean parking) are required near/below indicated groundwater level, it may be prudent to more closely establish seasonal high and low groundwater levels (as well as local fluctuations) by constructing piezometers and/or monitoring wells prior to awarding the construction contract or to include such installations and monitoring as a line item such that construction term groundwater levels are established and monitored to the contractors satisfaction.

5.4 Geologic Hazards

From our investigation it appears that geologic hazards at the site are primarily limited to those caused by strong shaking from earthquake generated ground motion waves. The effects of seismic shaking may be reduced by adhering to the 1997 UBC and seismic design parameters suggested by the Structural Engineers Association of California. A complete discussion of earthquake hazards (including earthquake accelerations) is presented in Section 6 of this report.

5.4.1 Tsunamis and Seiche Evaluation

Due to site elevation and distance from the Pacific Ocean, the site is not considered to be subject to tsunamis. Based on the absence of large bodies of water in the area, seiche (oscillatory waves in standing bodies of water) damage is not expected.

5.4.2 Landsliding or Rocksliding

The potential for landsliding or rocksliding to affect the site is considered very low. No features typically associated with landsliding were noted during the site investigation. In the reference review, no evidence of landslides was found to have occurred within the area of the site. According to State of California Seismic Hazard Zones mapping, the subject site is not located within an area with known landslides.

5.4.3 Compressible and Expansive Soils

Based on geologic observation, laboratory and *in-situ* testing, and the recommended remedial grading, we anticipate that the materials at the proposed structure foundation level will consist very stiff silty to sandy clay with relatively low compressibility characteristics.

A selected sample of site soil was analyzed for expansion potential using UBC test method 18-2. The expansion index of the soil was found to be 95, which indicates a *high* potential for expansion.

6.0 FAULT RUPTURE AND EARTHQUAKE HAZARD EVALUATION

6.1 Local and Regional Faulting

The project site is located within the San Andreas Fault system, which distributes shearing across a complex system of primarily northwest-trending, right-lateral, strike-slip faults that include the San Andreas, Hayward and Calaveras faults. Several oblique-slip and reverse faults, including the Berrocal, Shannon, Monte Vista and Santa Clara faults are along the base of nearby foothills.

6.2 Deterministic Seismic Analysis

The computer program *EQFAULT*, (Blake, 2000) was used to calculate the distances of known faults from the site. References used within the program in selecting faults to be included were Jennings (1975), Anderson (1984) and Wesnousky (1986). In addition to fault location, *EQFAULT* estimated peak ground accelerations at the site for maximum magnitude earthquakes for faults within a 100 mile radius. Attentuation relationships presented by Sadigh, *et al* (1997) were used to estimate peak site accelerations. Faults determined by the analysis to be most likely to subject the site to ground accelerations are presented in Table 1.

TABLE 1

MAXIMUM EARTHQUAKE MAGNITUDE AND PEAK SITE ACCELERATIONS*

Fault Name	Approximate Distance From Site (miles)	Estimated Maximum Earthquake Magnitude (Mw)	Estimated Peak Site Acceleration (g)
Monte Vista-Shannon	4.8	6.8	0.44
San Andreas (Peninsular)	8.6	7.1	0.28
San Andrea (1906)	8.6	7.9	0.35
Hayward (SE Extension)	9.1	6.4	0.19
San Andreas (Santa Cruz Mtn)	11.4	7.0	0.22
Hayward (South)	11.8	6.9	0.20
Hayward (Total Length)	11.8	7.1	0.22
Calaveras (No. of Reservoir)	11.9	6.8	0.19
Calaveras (So. Of Reservoir)	12.2	6.2	0.13

Sargent	14.1	6.8	0.17

* From *EQFAULT* Computer Program (Blake, 2000)

The site could be subject to moderate to severe ground shaking in the event of an earthquake on any of the above referenced faults or other faults within the northern California region. With respect to this hazard, the site is considered comparable to other sites in the general vicinity. While listing peak accelerations is useful for comparison of potential effects of fault activity in a region, other considerations are important in seismic design, including frequency and duration of motion and the soil conditions underlying the site.

6.3 Probabilistic Seismic Hazard Analysis

The computer program FRISKSP (Blake 2000a) was used to perform a site-specific probabilistic seismic analysis. The program is a modified version of FRISK (McGuire, 1978) that models faults as lines to evaluate site-specific probabilities of exceeding a given horizontal acceleration for each line source. The program operates under the assumption that the earthquake occurrence interval on each mapped Quaternary fault is proportional to the slip rate. The program accounts for fault rupture length as a function of earthquake magnitude. Site acceleration estimates are made using the earthquake magnitude and closest distance from the site to the rupture zone. The program also accounts for uncertainty in each of the following: (1) earthquake magnitude, (2) rupture length for a given magnitude, (3) location of the rupture zone, (4) maximum possible magnitude of a given earthquake, and (5) acceleration at the site from a given earthquake along each fault. By calculating the expected acceleration from all considered earthquake sources, the program calculates the total average annual expected number of occurrences for a site-acceleration greater than a specified value. Attenuation relationships proposed by Sadigh, et al. (1997), were utilized in the analysis. Using a weighting factor based on a 7.5M event, the results of the analysis indicate that there is a 10 percent probability of exceeding a mean acceleration of 0.42g within 50 years (475-year return period).

6.4 Seismic Design Criteria

According to the 1997 Uniform Building Code, the site is within seismic zone 4 with a seismic zone factor Z = 0.40. The nearest identified fault, the Monte Vista-Shannon a seismic source Type B, is located approximately 7.8 km from the subject site and the San Andreas fault is located about 13.9 km from the site. Based on our investigation and review of geologic literature, the site has a soil profile type of S_D. Based on these parameters, the site near-source factors are $N_v = 1.04$ and $N_a = 1.0$, and seismic coefficients $C_v = 0.66$ and $C_a = 0.44$.

6.5 Liquefaction Evaluation

Liquefaction occurs when saturated fine-grained sands, silts or low plastic clays lose their physical strength during earthquake-induced shaking and behave as a liquid. This is due to loss of point-to-point grain contact and transfer of normal stress to the pore water. Liquefaction potential varies with groundwater level, soil type, material gradation, relative density, and the intensity and duration of ground shaking.

Based on a review of the San Jose West Quadrangle Map, the site is located within an area designated as possessing a potential for liquefaction. As part of our geotechnical investigation, a preliminary evaluation of the liquefaction potential was performed. The soil profile from boring B-1 was used in this analysis and we assumed a high groundwater depth of 10 feet. The probabilistic site acceleration (10% in 50 years) of 0.42g was also used. This analysis utilized the computer program LiquefyPro.

The silty clay layers, located below the assumed high groundwater table (10 feet), were deemed not to be potentially liquefiable due to their elevated liquid limits, percent of clay-size particles (greater than 20 percent) and since their in-situ moisture content is below 80 percent of their liquid limit.

The results of this analysis are presented in Appendix E. Based on the results of this preliminary analysis, it is our opinion that the majority of the site soils are not potentially liquefiable. The silty sand encountered at a depth of approximately 43 feet below grade is potentially liquefiable. Due to the presence of a thick overlying non-liquefiable layer, liquefaction of the deeper silty sand deposit is not expected to result in surface manifestations (sand boils, loss of bearing, etc.). Most significant affect of the liquefaction of the deeper silty sand layer will be ground surface settlement resulting from volumetric strain within the liquefiable soils. As indicated on the liquefaction analysis (Appendix E), a total liquefaction induced settlement of about 1.3 inches is estimated for this site. A differential settlement of about 0.7 inches is estimated over a horizontal distance of 40 feet. We recommend that this magnitude of total and differential seismic-induced settlement be considered by the structural designers.

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6.6 Seismic Settlement Evaluation

Seismic settlement occurs when loose to medium dense granular soils densify during seismic events. The underlying site materials were generally consist of stiff to very stiff cohesive (non-granular) soils, and are not considered likely to experience significant seismic settlement. Therefore, in our opinion, the potential for seismic settlement resulting in damage to site improvements is considered low. We also expect that any loose/soft or disturbed materials present on the site will be mitigated through removal and recompaction in order to facilitate the proposed construction.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 General

Based on our investigation, the proposed construction on the site is feasible from a geotechnical standpoint, provided the recommendations in this report are incorporated into the design of the project. Recommendations for the design and construction of the proposed development are included in the subsequent sections of this report.

7.2 Site Preparation

7.2.1 General

Prior to grading the existing buildings should be demolished and all resulting debris should be removed from the site. Removal should include all floor slabs, foundations and any other subsurface construction. All soils disturbed by the demolition of the site improvements should be removed to competent ground and stockpiled for future use. Although no information has been provided to indicate the foundation type for the existing structures, it is possible that the existing 6 story building may be supported on a deep foundation system. Should a deep foundation be encountered, we recommend that the foundations be cut-off at least 3 feet below the bottom of all new base slabs and footings.

The existing asphalt pavement should also be removed and disposed off-site. If construction is planned during wet weather conditions, consideration should be given to leaving the existing pavement in-place as long as possible to help protect the underlying soils. Any existing underground utility in the area of planned development should be properly capped off and removed or be re-routed around the new development. In areas to receive structures or distress-sensitive improvements, expansive, surficial eroded, desiccated, burrowed, or otherwise loose or disturbed soils should be removed to the depth of competent material. Organic and other deleterious materials not suitable for use as structural backfill should be disposed of offsite at a legal disposal site.

Groundwater was encountered at approximately 12 to17 feet and is anticipated to be within 8 feet during the wet season. This groundwater depth will be a significant consideration for construction of a full level below grade parking garage. Any proposed parking garage basement will require excavation on the order of 6 to 12 feet below existing grades depending on final structure layout/elevation. Upon completion of the basement excavation, overexcavation should be performed such that the overexcavation will allow for a replacement of a minimum 12-inches of site soils with properly compacted Class 2 Aggregate Base materials. However, depending on the conditions encountered during construction, additional removals may be required. The need for this Class 2 base or other stabilization alternative should be re-evaluated once the building locations and the elevations of any subterranean parking level is known.

7.2.2 Remedial Grading

Following demolition of the existing improvements and the off-site disposal of the resulting debris, we recommend that the soils beneath the proposed buildings be removed to a depth of at least 4 feet below the bottom of the proposed footings and 3 feet below the bottom of the planned floor slabs. Should undocumented fill or other unsuitable materials be encountered at the base of the soil over-excavation, as determined by a CTE engineer/geologist at the time of grading, additional over-excavation or other subgrade stabilization techniques will be needed. This recommendation will need to be reviewed/revised once the building base floor slab elevations and structural loading information are known.

Beneath surface pavements, exterior concrete flatwork or other settlement sensitive surface improvements, we recommend that the existing soils be over-excavated to a depth of 24 inches below existing grade or finish grade, whichever is deeper.

7.2.3 Preparation of Areas to Receive Fill

The bottom of all excavations and areas to receive structural fill should be founded in competent natural soil materials, as determined by a CTE engineer/geologist at the time of grading. The exposed excavation bottom surfaces should be scarified to a minimum depth of 12-inches, brought to slightly above optimum moisture content, and compacted to at least 90 percent relative compaction as determined by ASTM D-1557 prior to fill placement.

7.2.4 Fill Placement and Compaction

All structural fill and backfill should be compacted to a minimum relative compaction of 90 percent as evaluated by ASTM D-1557 at moisture content of optimum or slightly above. The optimum lift thickness for fill soils will be dependent on the type of compaction equipment being utilized. Generally, fill should be placed in uniform horizontal lifts not exceeding 8-inches in loose thickness. Placement and compaction of fill should be performed in general conformance with geotechnical recommendations and local ordinances. All soils generated from on-site excavations are considered suitable for use as structural fill, provided they are free from deleterious material. Any proposed import material should be evaluated by the project geotechnical engineer prior to being placed at the site.

by the project geotechnical engineer prior to being placed at the site.

7.2.5 Transition Pad Condition

Due to the recommended remedial grading, we expect the proposed buildings to be entirely underlain by engineered fill. Therefore, over-excavation of the existing soils for a transition condition is not expected.

7.3 Temporary Construction Slopes

Sloping recommendations for unshored temporary excavations are provided herein. The recommended slopes should be relatively stable against deep-seated failure, but may experience localized sloughing. Recommended slope ratios are set forth in Table 2.

TABLE 2
RECOMMENDED TEMPORARY SLOPE RATIOS

SOILS TYPE	SLOPE RATIO (Horizontal: Vertical)	MAXIMUM HEIGHT
B (Competent Native Materials)	1:1 (MAXIMUM)	15 FEET
C (Fills)	1 ½:1 (MAXIMUM)	15 FEET

Actual field conditions and soil type designations must be verified by a "competent person" while excavations exist according to Cal-OSHA regulations. In addition, the above sloping recommendations do not allow for potential water seepage, or surcharge loading at the top of slopes by vehicular traffic, equipment or materials. Appropriate surcharge setbacks must be maintained from the top of all unshored slopes.

7.4 Temporary Shoring

7.4.1 General

Due to the possible subterranean excavation(s) and the expected depths, shoring may be needed. Any shoring will most likely consist of cantilever or tied-back soldier piles, with continuous timber lagging. The shoring contractor should be experienced in the design and construction of similar shoring systems and demonstrate proven competence on projects of similar size and magnitude.

A soil nail shoring system may also be suitable for use at this site; however, some cohesionless layers could be encountered. If such a system will be used, our office should be contacted to provide additional recommendations. The shoring designer and contractor should anticipate encountering local layers of relatively cohesionless and un-cemented materials that may be subject to sloughing. In addition, debris, gravels and/or cobbles may be locally encountered.

7.4.2 Lateral Earth Pressures

It is our understanding that a temporary shoring system may be used where sufficient setbacks for sloping excavations are not available. For design of braced shoring, we recommend the use of a trapezoidal distribution of earth pressure as shown on Figure 3. As shown on Figure 3, unbraced shoring may be designed using the same pressure with a triangular pressure distribution.

In addition to the recommended earth pressures, the upper 15 feet of shoring adjacent to streets or other traffic areas should be designed to resist a uniform lateral pressure of 100 psf that results from an assumed 300 psf surcharge behind the shoring due to typical street or other traffic. For traffic that remains more than 10 feet away from the shoring, the surcharge may be neglected.

Shoring designed as recommended should deflect less than one inch at the top of the shored embankment. These deflections should be within tolerable limits for the adjacent improvements, such as buried pipes and conduits or sidewalks and streets, provided these improvements are in generally good structural condition. Additional friction tiebacks and/or a greater active design pressure may be used to reduce the amount of deflection at the face of the shoring.

CTE should review the final shoring calculations and drawings in order to identify potential conflicts with the recommendations contained herein. In addition, observation by a CTE representative is recommended during shoring installation activities.

Weekly monitoring of settlement and horizontal movement of the shoring system and adjacent improvements should be performed during construction in order to verify that the movements are within tolerable limits. The number and locations of the monitoring points should be indicated on the shoring plan. CTE should review the planned monitoring points and proposed monitoring schedule once prepared and provided by the shoring contractor.

7.4.3 Design of Soldier Beams

For conventional soldier beam and lagging shoring system, soldier beams, spaced at least 3 diameters on center, may be designed using an allowable passive pressure of 200 psf per foot of depth to a maximum value of 3,000 psf, for the portion of the soldier beam embedded in competent native materials below the excavation. Provisions should be made to assure firm contact between the beam and surrounding soils. Concrete placed in soldier beams below the excavation should have adequate strength to transfer the imposed pressures. A lean concrete (slurry) mix may be used in the soldier pile above the base of the excavation. Soldier beam installation should be observed by CTE.

7.4.4 Lagging

Continuous timber or pre-cast concrete lagging between soldier beams is recommended. Lagging should be designed for the recommended earth pressures but be limited to a maximum pressure of 500 psf due to arching in the soil. Voids created behind lagging by sloughing of locally cohesionless soil layers should be grouted or slurry filled, as necessary. In addition, generally the upper two to four feet of lagging should be grounted or slurry filled to assist in diverting surface water from migrating behind the shored walls.

7.4.5 Anchor Design

For preliminary design purposes, it may be estimated that drilled friction anchors will develop an average friction of 2,000 psf for the portion of the anchor extending beyond the active wedge and embedded in the effective zone. However, additional capacities may be developed based on the installation techniques. Friction anchors should extend a minimum of 15 feet beyond the active wedge. However, greater lengths may be required to develop the desired capacities. The active wedge is defined as shown on Figure 4.

7.4.6 Friction Anchor Installation

Friction anchors may generally be installed at angles of 15 to 40 degrees below horizontal. Anchors should be filled from the tip outward to the approximate plane where the active wedge begins. The portion of the anchor in the active wedge should not be filled with concrete. Localized caving of cohesionless soil may occur during tieback drilling and the contractor should have adequate means for mitigation.

7.4.7 Friction Anchor Testing

To verify the friction value used in design, all anchors should be load tested to at least 133% of the design load and in accordance with the Post Tensioning Institute (PTI). Performance testing should also be performed as per PTI recommendations. Our firm should continuously observe the installation of the anchors and all load testing. The shoring contractor should supply information on the hydraulic jacks verifying that they have been recently calibrated before their use.

It may be required by the governing agency that temporary construction shoring tieback anchors extending into the public right-of-way be disengaged or removed following construction of the proposed improvements. Disengaging the temporary shoring tieback anchors should have no impact on the proposed or existing improvements, provide the proposed improvements are designed in accordance with the recommendations contained in this report. In addition, CTE should observe the disengaging of the tieback anchors in order to provide the necessary documentation at the completion of the project.

7.5 Foundations and Slab Recommendations

7.5.1 General

Foundations and slabs should be designed in accordance with structural considerations and the following recommendations. We anticipate that the foundations will be founded entirely in properly compacted fill materials.

7.5.2 Shallow Foundations for At-Grade Structures

Following site grading, it is our opinion that the use of shallow spread footings will be geotechnically suitable for this project for at-grade construction. In general, allowable bearing pressures for shallow spread and continuous footings will be dependent on the footing size as well as the allowable settlements. We recommend that shallow spread and continuous footings be constructed a minimum of 15 inches wide and be founded at least 18 inches below the lowest adjacent subgrade.

Foundation dimensions should be based on an allowable bearing pressure of 3,000 psf for the minimum footing dimensions noted above. The allowable soil bearing pressure may be increased by 400 psf for every additional foot of depth to a maximum value of 4000 psf. The allowable bearing value may be increased by one third for short duration loading which includes the effects of wind or seismic forces.

Footing reinforcement within continuous footings should consist of a minimum of four #5 bars, two located at the top of the footing and two located at the bottom. This minimum reinforcement is due to geotechnical site conditions and is not to be used in lieu of that needed for structural considerations. Reinforcement for column footings should be determined by the structural engineer.

Lateral loads for structures supported on spread footings may be resisted by soil friction and by the passive resistance of the soils. A coefficient of friction of 0.30 may be used between foundations or the floor slabs and the supporting soils. The passive resistance of the fill soils may be assumed equal to the pressure developed by a fluid with a density of 225 pcf. A one-third increase in the passive value may be used for wind or seismic loads. The frictional resistance and the passive resistance may be combined without reduction in determining the total lateral resistance.

7.5.3 Settlement of Foundations

We have analyzed static settlement potential during construction and for long-term performance. Construction settlement is expected to occur as loads are applied and structures are brought to their operational weight. Long-term settlement is expected to occur over time as a result of compression of wetted or partially saturated soil. Anticipated settlements are related to an applied bearing pressure for the proposed building of 3,000 psf and an assumed maximum column load of 250 kips.

Provided the grading recommendations presented herein are followed, it is anticipated that shallow foundations designed and constructed as recommended will experience maximum total and differential static settlement of less than 1.0 inch and 0.5 inch, respectively. Potential liquefaction-induced settlement was discussed in Section 6.5 of this report.

7.5.4 Concrete Slabs

The conventional concrete garage slab-on-grade should be designed for the anticipated loading. Concrete floor slabs should be at least five inches thick and should be reinforced with a minimum of #4 reinforcing bars placed on 18-inch centers, each way at mid-slab height. Additional steel reinforcement/design may be recommended by the structural engineer. The correct placement of the reinforcement in the slab is vital for satisfactory performance under normal conditions. The floor slab and foundations should be tied together by extending the slab reinforcement into the footings, or as recommended by the structural engineer.

Dependent upon the depth of the parking garage floor slabs, the slabs may need to be underlain by a minimum 12-inch thick layer of properly compacted aggregate base or consolidated crushed rock in order to provide uniform support and to act a capillary break against moisture migration through the slab. Aggregate base shall be compacted to at least 95 percent of its maximum dry density as determined by ASTM Test Method D1557. As an alternative lime treatment of the upper 12 inches of subgrade materials may be feasible. We recommend a modulus of subgrade reaction of 150 pounds per cubic inch (pci) for the base course or lime treated materials. Even with a capillary break as outlined above, there is the possibility of some floor moisture or dampness.

If floor moisture is a critical consideration due to storage of materials directly on the floor slab, or because of the use of glued down/impervious floor coverings such as tile or linoleum, we recommend the use of an under-slab impermeable membrane. Normally a two inch thick sand layer is placed above and below the membrane to protect it from punctures during construction, and to assist in the curing of the concrete floor slab. To maximize water tightness, the membrane must be installed in accordance with the manufacturer's recommendations with all laps and penetrations sealed or taped.

Subsurface drains are recommended to be installed adjacent to the exterior footings and possibly beneath the floor slabs, dependent upon their elevations and the slab design. Therefore, parking garage levels may not absolutely require such drains. Water should be transported away from footings to an approved disposal area (typically to storm drain system). Outlets must not permit backflow into subsurface drains.

Based on final structure layout/elevation relief of hydrostatic pressure may be prudent or necessary. Relief of pressure from potential rises in groundwater could be accomplished by means of pressure relief plugs or subdrains below the mat slab. The basement should also be equipped with a permanent sump pump for control of accumulations of surface runoff.

The project architect shall determine the necessity of a visqueen or other moisture deterrent or waterproofing membranes beneath the proposed parking garage or other slabs-on-grade proposed for the subject development.

It is recommended that all concrete slabs be moist-cured for at least five days in accordance with methods recommended by the American Concrete Institute. Onsite quality control should be used to confirm the design conditions.

If concrete slabs-on-grade are proposed below the design groundwater depth, hydrostatic pressures shall be accommodated and additional recommendations and/or design considerations may be necessary.

Lightly loaded exterior slabs should be at least five inches thick and should be reinforced with at least #3 reinforcing steel placed 18-inches on center, each way, at mid-slab height; or as per the project structural engineer or architect. Dowelling exterior slabs into the adjacent improvements may decrease differential movement between buildings and exterior slabs, or between sidewalks and curbs. Crack control joints should be spaced and detailed by the project architect or structural/civil engineer.

The moisture content of the subgrade soils beneath concrete slab areas should be maintained and confirmed at a minimum 130% of the optimum moisture content 9to a depth of 12 inches) just prior to concrete placement due to the anticipated highly expansive subgrade materials. As a result, presoaking of such areas will be necessary.

7.5.5 Structural Mat Foundations

For structures with a subterranean parking garage component, a structural mat foundation may be desired, dependent upon the depth of the parking garage, depth to groundwater and the structural loading conditions. A structural mat foundations installed a minimum of 60 inches below the lowest adjacent exterior grade, 30 inches below the lowest adjacent interior top of slab elevation, and into competent materials may be designed for an allowable bearing pressure of 2,500 psf. A one-third increase may also be used for wind or seismic loads.

For mat foundations at this minimum depth, a coefficient of subgrade reaction (uncorrected for mat size) of 100 pounds per square inch per inch (pci) may preliminarily be used in the design of the mat. However, the uncorrected coefficient of subgrade reaction should be reduced to approximately 85 pci beneath highly loaded foundation elements during evaluation of short-term loads such as seismic or wind. We recommend that CTE review the design of the mat foundation and the resulting pressure distributions. In addition, more specific geotechnical recommendations should be provided once the project design is more defined and additional geotechnical analysis has been performed.

Estimated total settlement of structural mat foundations is anticipated to be less than 2.0 inches. Differential settlements across the building are anticipated to be on the order of 1.0 inch. We anticipated approximately 1/4 to 1/3 of the estimated settlement value to occur during construction.

7.6 Retaining Walls

For the design of walls where the surface of the backfill is level, it may be assumed that the soils will exert an active lateral pressure equal to that developed by a fluid with a density of 40 pcf. The active pressure should be used for walls free to yield at the top at least 0.2 percent of the wall height. For walls restrained at the top so that such movement is not permitted, an equivalent fluid pressure of 60 pcf should be used, based on at-rest soil conditions. An additional pressure of 28 pcf should be added to the above pressures for walls that will retain a sloped soil backfill inclined at 2:1 (horizontal: vertical). Subterranean walls below the design water table shall utilize an additional 20 pcf increase to the values indicated above, if proposed.

In addition to the recommended earth pressure, the upper 15 feet of subterranean structure walls adjacent to the streets or other traffic loads should be designed to resist a uniform lateral pressure of 100 psf. This is the result of an assumed 300-psf surcharge behind the walls due to typical street traffic. If the traffic is kept back at least 10 feet from the subject walls, and a distance equal to the wall height, the traffic surcharge may be neglected. The project architect should consider the necessity for waterproofing the subterranean structure walls to reduce moisture infiltration

In addition, a design passive resistance value of 250 pounds per square feet per foot of depth to maximum value of 2000 psf may be used. The earth pressures recommended above are based on the assumption that free draining select granular soils will be used as backfill and that walls are provided with a backfill drain system to prevent a buildup of hydrostatic pressures.

We recommend that walls be backfilled with soil having an expansion index of 40 or less. The backfill area should include the zone defined by a 1:1 sloping plane, extended back from the base of the wall. Wall backfill should be compacted to at least 90 percent relative compaction, based on

ASTM D1557. Backfill should not be placed until walls have achieved adequate structural strength. Heavy compaction equipment, which could cause distress to walls, should not be used.

7.7 Vehicular Pavements And Site Improvements

The pavement section evaluation presented here is for preliminary consideration only. Preliminary pavement sections presented below in Table I for flexible pavement are based on a Resistance "R"-Value of 25, as determined in our laboratory, and the assumption subgrade and base materials are compacted to at least 95% relative compaction.

TABLE 3

Traffic Area	Assumed Traffic Index	Assumed Subgrade "R"-Value	AC Thickness (inches)	Class II Aggregate Base Thickness (inches)
Driving Lanes	7.0	25	4.0	11.0
Auto Parking Areas	5.0	25	3.0	6.5

We recommend that soils underlying all proposed pavement areas be prepared as previously recommended (Section 7.2). Any loose or disturbed subgrade soils observed/encountered at the time of pavement construction should be removed to the depth of competent soil. Exposed soils should be scarified, moisture conditioned and compacted to 95% of the maximum dry density (ASTM D-1557). Soils required to achieve design grade should then be compacted in 6-inch lifts to subgrade elevation at 95% of the maximum dry density as determined by ASTM D 1557. All Class II aggregate base materials should be compacted to at least 95% of the laboratory maximum density

(ASTM D-1557). In addition, it is recommended that all pavement areas conform to the following criteria.

1. All trench backfills, including utility and sprinkler lines, should be properly placed and adequately compacted to provide a stable pavement subgrade.
2. An adequate drainage system should be provided to prevent surface water or subsurface seepage from saturating the subgrade soil.
3. Placement and construction of the recommended pavement section should be performed in accordance with the Standard Specifications for Public Works Construction. Class II aggregate base should be used as outlined and should have a minimum R-Value of 78. Final in-place density of the Class II aggregate base should be 95 percent of the maximum dry density per ASTM D-1557.
4. Surface run-off and irrigation water should be directed away from the parking areas to avoid contributing to wet or saturated soils beneath the pavement.
5. Pavement sections are prepared assuming that periodic maintenance of pavements will be done, including sealing of cracks and other measures.
6. Pavement around areas of heavy loading should be paved with a minimum of 6 inches of concrete reinforced with No. 3 bars on 18-inch centers.

7.8 Exterior Flatwork

Exterior concrete flatwork should have a minimum thickness of 4-inches, unless otherwise specified. To reduce the potential for distress to exterior flatwork caused by minor settlement of foundation soils, we recommend that such flatwork be installed with crack-control joints at appropriate spacing as desired by the structural engineer. Flatwork, such as driveways, sidewalks, and architectural features, should be installed with crack control joints. All subgrades should be prepared in accordance with the earthwork recommendations previously given prior to placing concrete. Positive drainage should be established and maintained adjacent to all flatwork.

7.9 Drainage

Positive drainage should be established around all site structures and is defined as drainage away from structures at a gradient of at least 2 percent for a distance of at least 5 feet. To facilitate this, the proper use of construction elements such as roof drains, downspouts, concrete swales, sloped external slabs-on-grade, and subdrains may be employed. The project civil engineer should thoroughly evaluate the on-site drainage and make provisions as necessary to keep surface water from entering structural areas. The final disposition of storm water run-off should comply with requirements of the local jurisdiction.

7.10 Additional Geotechnical Investigation

We recommend that additional geotechnical studies be conducted at the site once the building locations and structural loading information is known. At that time more specific recommendations can be provided based on the planned development and encountered soil conditions.

7.11 Plan Review

CTE should review project grading and foundation plans before the start of earthworks to identify potential conflicts with the recommendations contained in this report.

8.0 LIMITATIONS OF INVESTIGATION

The recommendations presented herein are preliminary in nature and may be subject to change based on further evaluation and additional information discovered during the completion of this investigation.

The preliminary recommendations provided in this report are based on the anticipated construction and the subsurface conditions found in our explorations. The interpolated subsurface conditions should be checked in the field during construction to verify that conditions are as anticipated.

Recommendations provided in this report are based on the understanding and assumption that CTE will provide the observation and testing services for the project. All earthworks should be observed and tested to verify that grading activity has been performed according to the recommendations contained within this report. The project geotechnical engineer should evaluate all footing excavations prior to placement of reinforcing steel.

The field evaluation, laboratory testing and geotechnical analysis presented in this report have been conducted according to current engineering practice and the standard of care exercised by reputable geotechnical consultants performing similar tasks in this area. No other warranty, expressed or implied, is made regarding the conclusions, recommendations and opinions expressed in this report. Variations may exist and conditions not observed or described in this report may be encountered during construction.

Our conclusions and recommendations are based on an analysis of the observed conditions. If conditions different from those described in this report are encountered, our office should be notified and additional recommendations, if required, will be provided upon request. CTE should review project specifications for all earthwork, foundation, and shoring-related activities prior to the solicitation of construction bids.

We appreciate this opportunity to be of service on this project. If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Respectfully submitted,
CONSTRUCTION TESTING & ENGINEERING, INC.

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Principal Engineer

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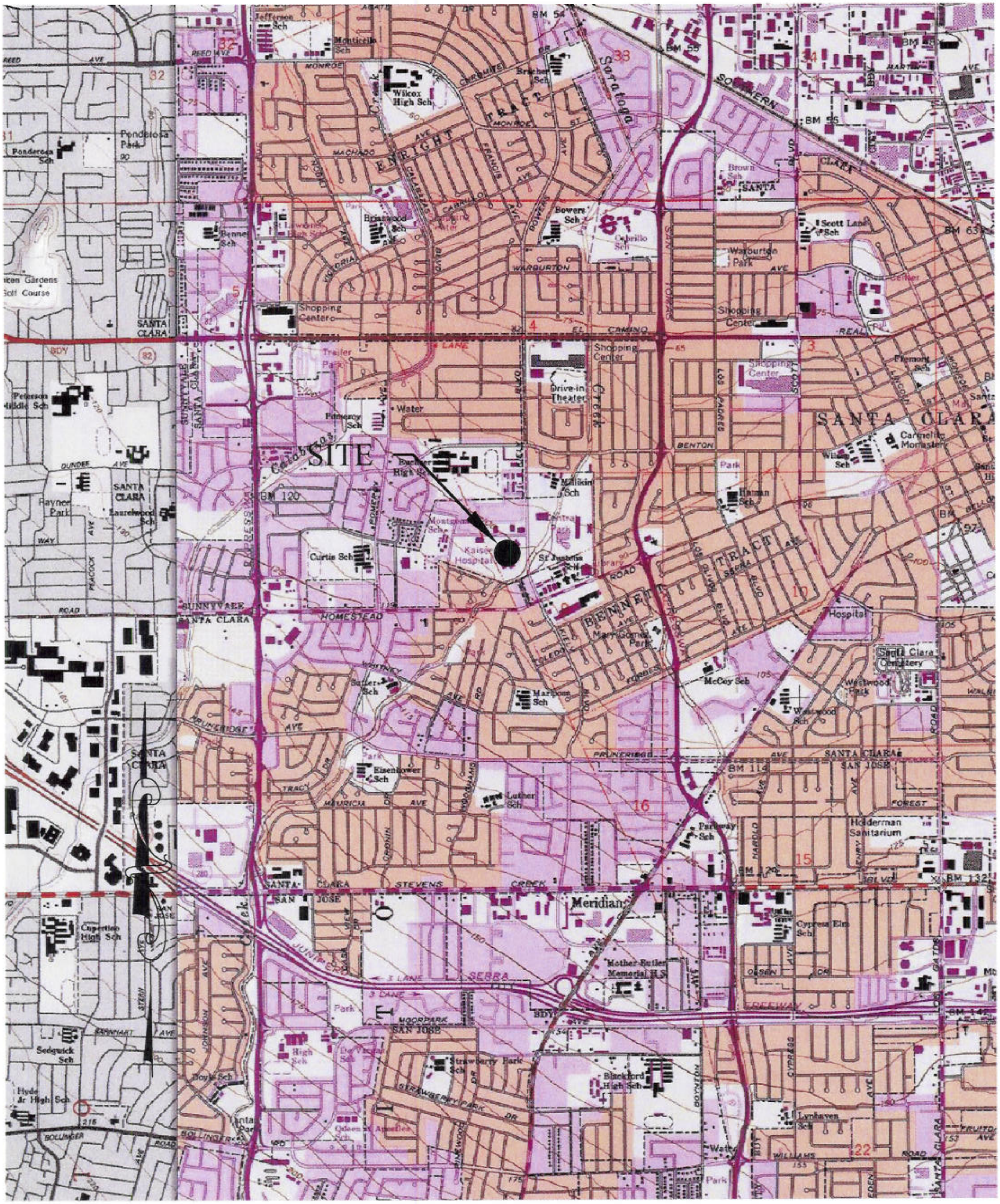

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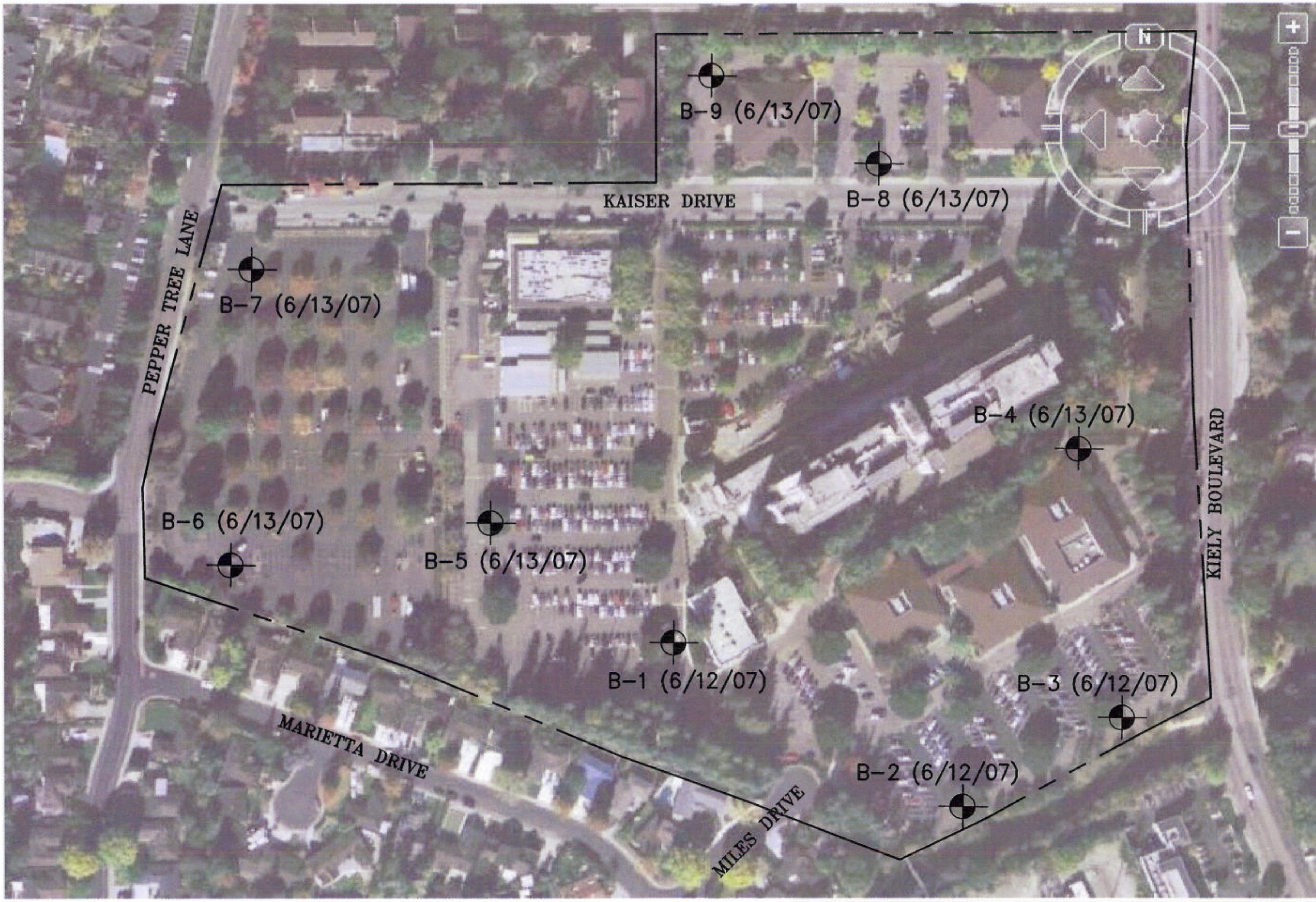
SITE INDEX MAP

PROPOSED FAIRFIELD DEVELOPMENT SITE
900 KIELY BOULEVARD
SANTA CLARA, CALIFORNIA

CTE JOB NO:	20-1926
SCALE	NTS
DATE:	7/02/07
FIGURE:	1



LEGEND

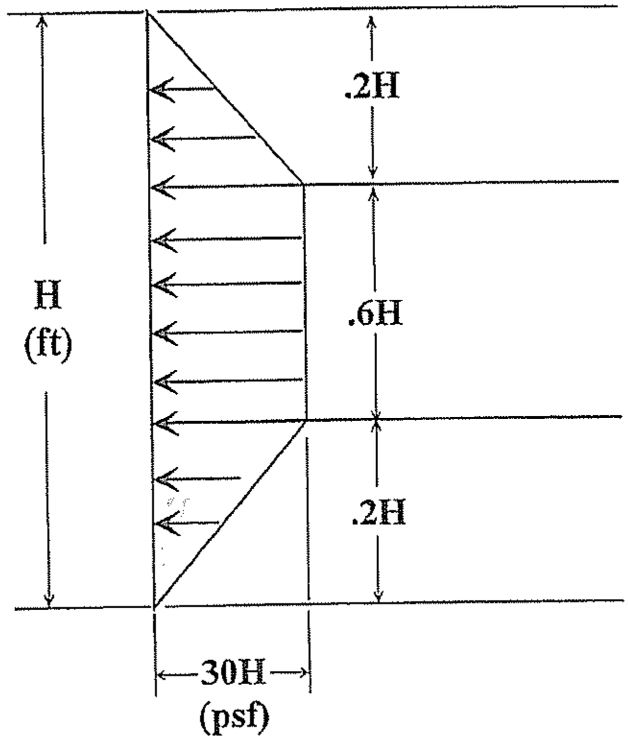
B-1 APPROXIMATE BORING LOCATION

APPROXIMATE PROPERTY LINE

CONSTRUCTION TESTING & ENGINEERING, INC GEOTECHNICAL AND CONSTRUCTION ENGINEERING TESTING AND INSPECTION 242 W. LARCH ROAD, SUITE F TRACY CA 95304 (209) 839-2890	
EXPLORATION MAP PROPOSED FAIRFIELD DEVELOPMENT SITE 900 KIELY BOULEVARD SANTA CLARA, CALIFORNIA	CTE JOB NO: 20-1926 SCALE: NTS DATE: 7/02/07 FIGURE: 2

/OLANDER/C:/SDSK/PROJ/20-1926/EXPLORATION MAP(20-1926).DWG

ACTIVE PRESSURE DIAGRAM FOR SHORING



NOTES: An additional uniform lateral pressure of 100 psf should be applied to upper 10 feet of shoring if traffic loading is allowed within 10 feet of the face of shoring.

For design of unbraced shoring, a triangular distribution shall be used.

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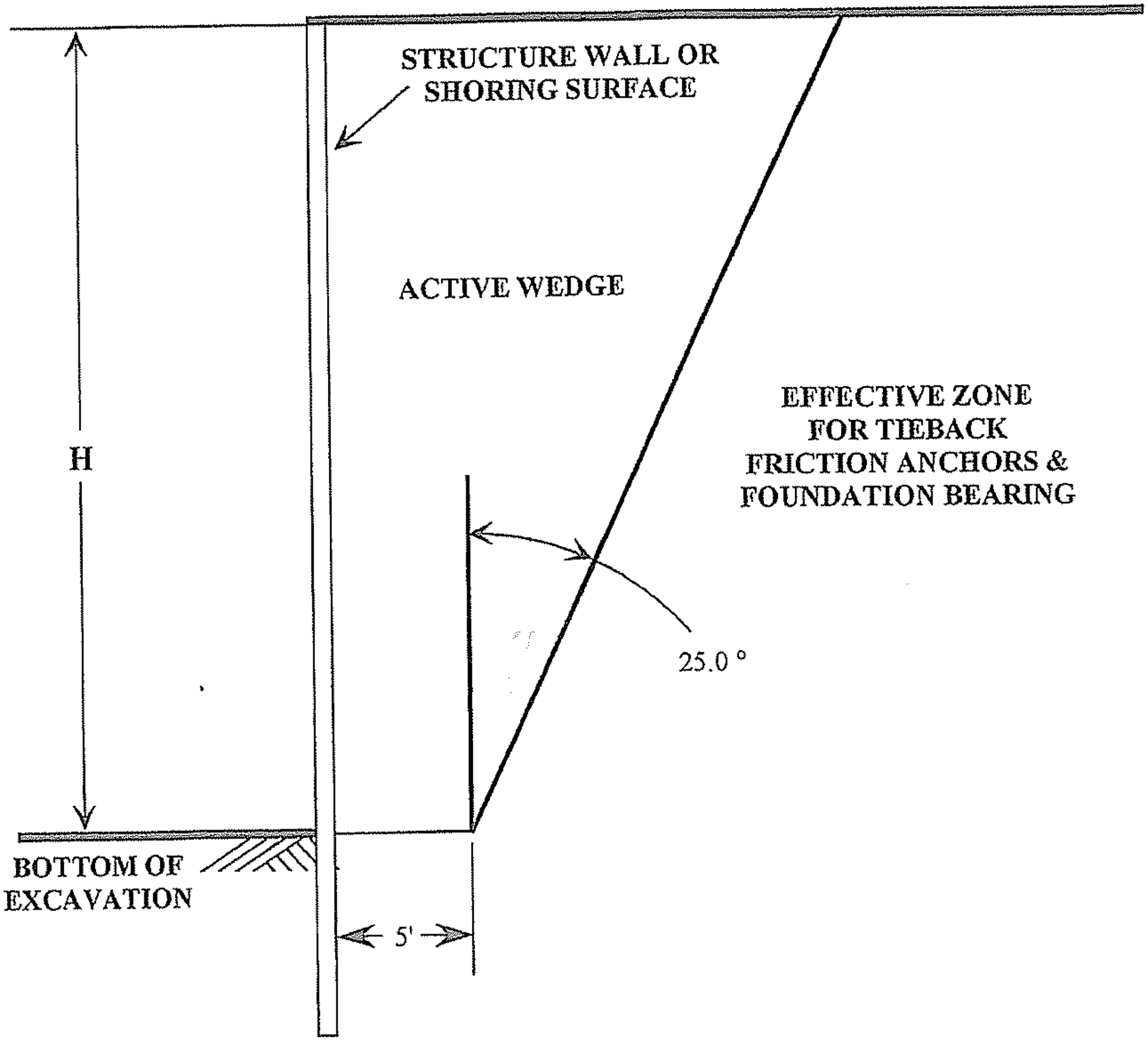
BRACED SHORING DESIGN PRESSURE NOTE: ALL PRESSURES ARE IN psf, ALL HEIGHTS ARE IN FEET	CTE JOB NO 20-1926
	SCALE NO SCALE
	DATE 7/07 — FIGURE 3



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**RECOMMENDED ACTIVE WEDGE/
EFFECTIVE ZONE FOR TIEBACK ANCHORS**

NOTE: ALL HEIGHTS ARE IN FEET

CTE JOB NO: 20- 1926	
SCALE: NO SCALE	
DATE: 7/07	FIGURE: 4

APPENDIX A

REFERENCES

REFERENCES

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APPENDIX B

FIELD EXPLORATION METHODS AND BORINGS LOGS

APPENDIX B

FIELD EXPLORATION METHODS AND BORINGS LOGS

Soil Boring Methods

Relatively "Undisturbed" Soil Samples

Relatively "undisturbed" soil samples were collected using a modified California-drive sampler (2.4-inch inside diameter, 3-inch outside diameter) lined with sample rings. Drive sampling was conducted in general accordance with ASTM D-3550. The steel sampler was driven into the bottom of the borehole with successive drops of a 140-pound weight falling 30-inches. Blow counts (N) required for sampler penetration are shown on the boring logs in the column "Blows/6 Inches." The soil was retained in brass rings (2.4 inches in diameter, 1.00 inch in height). The samples were retained and carefully sealed in waterproof plastic containers for shipment to the Construction Testing & Engineering ("CTE") geotechnical laboratory.

Disturbed Soil Sampling

Bulk soil samples were collected for laboratory analysis using two methods. Standard Penetration Tests (SPT) were performed according to ASTM D-1586 at selected depths in the borings using a standard (1.4-inches inside diameter, 2-inches outside diameter) split-barrel sampler. The steel sampler was driven into the bottom of the borehole with successive drops of a 140-pound weight falling 30-inches. Blow counts (N) required for sampler penetration are shown on the boring logs in the column "Blows/6 Inches." Samples collected in this manner were placed in sealed plastic bags. Bulk soil samples of the drill cuttings were also collected in large plastic bags. All disturbed soil samples were returned to the CTE geotechnical laboratory for analysis.

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PROJECT:
CTE JOB NO:
LOGGED BY:

DRILLER:
DRILL METHOD:
SAMPLE METHOD:

SHEET: of
DRILLING DATE:
ELEVATION:

BORING LEGEND

Depth (Feet)	Bulk Sample	Driven Type	Blows/Foot	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0								Block or Chunk Sample	
								Bulk Sample	
5									
								Standard Penetration Test	
10								Modified Split-Barrel Drive Sampler (Cal Sampler)	
								Thin Walled Army Corp. of Engineers Sample	
15								Groundwater Table	
								Soil Type or Classification Change	
20								? — ? — ? — ? — ? — ? — ? —	
								Formation Change [(Approximate boundaries queried (?)]	
25						"SM"		Quotes are placed around classifications where the soils exist in situ as bedrock	

FIGURE: BL2

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	1 of 2
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/12/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-1

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						AC/ GM		3" AC over 8"-9" ± Medium Dense, Dry, Dark Brown, Silty, Sandy, Fine GRAVEL (Fill)	
5	X		2 5 6	98.0	16,6	CL/ CH		Very Stiff to Hard, Damp, Dark Brown, Medium-Highly Plastic CLAY with $CaCO_3$ Nodules (Strong HCl Reaction)	PP≥4.5 tsf qu=11,808 psf
10			3 3 3	111.0	14.9	CL		Very Stiff, Damp, Light Brown, with Orange & Black Speckles, Low-Medium Plastic CLAY with Trace Fine-Coarse Sand	PP=2.5-3.0 tsf qu=4.752 psf
15			2 3 3	101.0	24.5	CL		Same As Above - Wet with Very Thin (<1") Layers Very Fine, Sandy SILT	PP=1.75, 1.50 & 1.25 tsf qu=3,600 psf
20			2 3 2	101.0	25.3	CL		Very Stiff, Moist, Orange Brown & Gray, Low Plastic, Silty CLAY	LL=35; PI=22 qu=5,904 psf
25									

(Continued on Sheet 2)

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	2 of 2
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/12/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-1 (Cont'd)

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
25			2 4 5	109.0	22.0	CL & ML		Very Stiff, Moist, Brown & Gray, Low Plastic, Silty, CLAY & Clayey Silt with Trace Fine Sand	PP=1.5-2.0 tsf LL=39; PI=24 qu=4,752 psf
30			3 3 5	105.0	22.8	CL		Stiff, Damp & Locally Moist, Brown & Gray & Locally Black, Low Plastic, Silty CLAY with $CaCO_3$ Nodules	PP=1.0-1.5 tsf qu=4,752 psf
35			3 3 4	105.0	23.7	CL		Stiff, Moist, Gray & Blue-Green, Low Plastic, Silty CLAY with Abundant $CaCO_3$ Fragments & Local Organics (Reacts Strongly to HCl)	PP=1.25-1.5 tsf LL=36; PI=20 qu=1,152 psf
40			3 5 7	116.0	18.0	CL		Stiff to Very Stiff, Damp, Blue-Gray, Low Plastic CLAY with Trace, Fine Sand (Old Bay Mud)	PP=1.5-2.5 tsf qu=3,600 psf
45			4 10 6			SM		Medium Dense, Wet, Brown, Silty, Fine-Coarse SAND	
50								Total depth = 46.5 feet below grade. Groundwater encountered @ 14.0' while augering. Boring backfilled with grout (6/12/07).	

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	1 of 1
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/12/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-2

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						AC/ GM		AC to 3" Then Medium Dense, Dry, Brown, Silty, Sandy, Fine GRAVEL (AB/Fill)	
	X	I	4 5 5	97.0	19.2	CL/ CH		Very Stiff, Damp, Dark Brown, Medium-Highly Plastic CLAY	qu=10,512 psf
5								Total depth = 5.0 feet below grade. No groundwater encountered to total explored depth. Boring backfilled with grout (6/12/07).	
10									
15									
20									
25									

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	1 of 1
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/12/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-3

Depth (Feet)	Sample: Bulk	Sample: Driven Type	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						AC/ GM		4" AC over 8"± Medium Dense, Brown, Silty, Sandy, Fine GRAVEL (AB/Fill)	
		▯	2 5 7	94.0	18.0	CL/ CH		Hard, Damp, Brown to Dark Brown, Sandy, Fine Gravelly CLAY to Medium-Highly Plastic CLAY	PP≥4.5 tsf qu=12,960 psf
5		▯	3 4 6	105.0	17.3	CL/ CH		Hard, Damp, Dark Brown, Medium-Highly Plastic CLAY	PP≥4.5 tsf qu=11,808 psf
10		▯	2 3 4	101.0	21.4	CL		Very Stiff, Moist, Light Brown & Gray, Low Plastic, Silty CLAY	PP=2.0-3.0 tsf qu=2,304 psf
								Total depth = 11.5 feet below grade. No groundwater encountered to total explored depth. Boring backfilled with grout (6/12/07).	
15									
20									
25									

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	1 of 1
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/13/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-4

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						AC/ GM		3" AC over Medium Dense, Dry, Brown, Silty, Sandy, Fine GRAVEL (AB/Fill)	
5			3 6 9			CL/ CH		Very Stiff, Damp, Greenish Gray & Brown, Low-Medium Plastic CLAY with Abundant CaCO3 Nodules & Trace Fine Gravel (Strong HCl Reaction)	PP=2.5-4.0 tsf
10			3 4 8			CL/ CH		Same As Above	PP=2.5-3.5 tsf
15			1 4 6			CL		Stiff, Moist, Brown, Fine, Sandy, Low Plastic, Silty CLAY	PP=0.5-1.5 tsf
20			7 9 12			SM		Medium Dense, Wet, Brown, Silty, Fine, Gravelly, Fine-Coarse SAND	
						SM-GM		Same As Above to Silty, Sandy, Fine GRAVEL	
25								Total depth = 25.0 feet below grade. Groundwater initially observed after 15'-20' auger run. Groundwater stabilized at 12.0' upon completion. Boring backfilled with grout (6/13/07).	

NOTE: Augered 20.0-25.0 Interval & Boring Caved Back to 20.0 (No Sample @ 25.0')

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	1 of 1
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/13/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-5

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						AC/ GM		3" AC over 9"± Medium Dense, Dry, Brown, Silty, Fine-Coarse, Sandy, Fine GRAVEL (AB/Fill)	
5			3 9 8	116.0	12.6	CL/ CH		Hard, Damp, Dark Brown, Fine-Coarse, Sandy, Medium Plastic CLAY	PP≥4.5 tsf
10			4 10 13			CL		Very Stiff, Damp, Brown, Low Plastic CLAY with Cemented Fragments	PP=3.75-4.0 tsf
15			2 3 3	94.0	27.3	CL		Stiff, Moist, Orange Brown & Gray, Low Plastic, Silty CLAY	PP=1.5-2.0 tsf qu=3,600 psf
20			2 3 3	103.0	23.8	CL		Stiff, Damp, Orange Brown, Low Plastic CLAY	PP=1.25-1.75 tsf qu=2,304 psf
25								Total depth = 21.5 feet below grade. Groundwater encountered at 14.2' upon completion. Boring backfilled with grout (6/13/07).	

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	1 of 1
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/13/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-6

Depth (Feet)	Sample: Bulk	Sample Type: Driven	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						AC/ GM		AC to 3" over Medium Dense, Dry, Brown, Silty, Sandy, Fine, GRAVEL (AB/Fill)	
5		X	3 5 5			CL		Hard, Damp, Dark Brown, Medium Plastic CLAY with Fine-Coarse Sand & Fine Gravel	PP≥4.5 tsf
10		X	5 3 4			GC		Loose, Damp, Brown, Clayey, Fine-Coarse, Sandy, Fine GRAVEL	
								Total depth = 11.5 feet below grade. No groundwater encountered to total explored depth. Boring backfilled with grout (6/13/07).	
15									
20									
25									

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	1 of 2
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/13/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-7

Depth (Feet)	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	DESCRIPTION	Laboratory Tests
0				AC/ GM	AC to 3" over Medium Dense, Dry, Brown, Silty, Fine-Coarse, Sandy, Fine GRAVEL (AB/Fill)	
5	2 4 4	109.0	15.7	CL/ CH	Very Stiff, Damp, Dark Brown, Medium Plastic CLAY with Trace Sand & Fine Gravel	PP=3.5-4.0 tsf qu=9,360 psf
10				CL	Stiff, Dry, Brown, Low Plastic CLAY with Cemented Fragments	
15	2 3 4	103.0	21.0	CL	Stiff, Moist, Brown & Gray, Low Plastic, Silty CLAY	PP=1.5-2.0 tsf qu=5,904 psf
20	1 3 4	99.0	25.1	CL	Same As Above	PP=1.0-1.5 tsf qu=3,600 psf
25				GC	Dense, Wet, Brown, Clayey, Fine-Coarse, Sandy, Fine GRAVEL	

(Continued on Sheet 2)

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	2 of 2
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/13/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-7 (Cont'd)

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
25			9 15 16		10.4	GC		Dense, Wet, Brown, Clayey, Fine-Coarse, Sandy, Fine GRAVEL	
								Total depth = 26.5 feet below grade. Groundwater encountered 17.0' upon completion. Boring backfilled with grout (6/13/07).	
30									
35									
40									
45									
50									

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	1 of 1
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/13/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-8

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						AC/ GM		AC to 3" over Medium Dense, Dry, Silty, Sandy, Fine GRAVEL (AB/Fill)	
	X		2 5 6			CL/ CH		Very Stiff, Damp, Dark Brown, Moderately Plastic CLAY with Fine-Coarse Sand	PP=3.5-4.5 tsf
5			3 5 6			CL/ CH		Same As Above	PP=3.0-3.5 tsf
								Total depth = 6.5 feet below grade. No groundwater encountered to total explored depth. Boring backfilled with grout (6/13/07).	
10									
15									
20									
25									

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PROJECT:	Proposed Fairfield Development Site	DRILLER:	All Star Drilling	SHEET:	1 of 1
CTE JOB NO:	20-1926	DRILL METHOD:	4" Auger	DRILLING DATE:	06/13/07
LOGGED BY:	TAK	SAMPLE METHOD:	SPT w/ Brass Tube	ELEVATION:	EGS

BORING: B-9

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 Inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						AC/ GM		AC to 3" over Medium Dense, Dry, Brown, Silty, Sandy, Fine GRAVEL (AB/Fill)	
			2 6 8			CH		Hard, Damp, Dark Brown, Medium-Highly Plastic CLAY	PP≥4.5 tsf
5									
						CH		Same As Above	
						CL		Stiff, Damp, Brown & Gray, CLAY & Silty, Clay with Low Plasticity	
10									
								Total depth = 11.0 feet below grade. Auger refusal - Auger squeeling on unknown materal @ 11.0', No advancement noted within 5 minutes. No groundwater encountered to total explored depth. Boring backfilled with grout (6/13/07).	
15									
20									
25									

APPENDIX C

LABORATORY METHODS AND RESULTS

APPENDIX C
LABORATORY METHODS AND RESULTS

Laboratory tests were performed on representative soil samples to detect their relative engineering properties. Tests were performed following test methods of the American Society for Testing Materials or other accepted standards. The following presents a brief description of the various test methods used. Laboratory results are presented in the following section of this Appendix.

Classification

Soils were classified visually according to the Unified Soil Classification System. Visual classifications were supplemented by laboratory testing of selected samples according to ASTM D2487.

Particle-Size Analysis

Particle-Size Analyses were performed on selected representative samples in accordance with ASTM D422 or D1140.

Atterberg Limits

The procedure of ASTM D4518-84 was used to measure the liquid limit, plastic limit and plasticity index of representative samples.

Expansion Index

Expansion testing was performed on selected samples of the matrix of the onsite soils according to Building Code Standard No. 29-2.

In-Place Moisture/Density

The in-place moisture content and dry unit weight of selected samples were determined using relatively undisturbed chunk soil samples.

Direct Shear

Direct shear tests were performed on either samples direct from the field or on samples recompacted to 90% of the laboratory maximum value overall. Direct shear testing was performed in accordance with ASTM D3080 -72 to evaluate the shear strength characteristics of selected materials. The samples were inundated during shearing to represent adverse field conditions.

Consolidation/Collapse Tests

The collapse potential of the near-surface soils was determined on relatively undisturbed ring samples. The samples were loaded to expected post-construction stress increases and after stabilization, the sample was saturated. The collapse potential is measured as the consolidation after saturation.

Modified Proctor

Laboratory compaction tests were performed according to ASTM D1557. A mechanically operated rammer was used during the compaction process.

Resistance "R"-Value

The resistance "R"-value was determined by the California Materials Method No. 301 for representative subbase soils. Samples were prepared and exudation pressure and "R"-value determined. The graphically determined "R"- value at exudation pressure of 300 psi is the value used for pavement section calculation.

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ATTERBERG LIMITS

ASTM D4318

LOCATION	DEPTH (feet)	LIQUID LIMIT	PLASTICITY INDEX	CLASSIFICATION
B-1/4	20-21.5	35	22	CL
B-1/5	25-26.5	39	24	CL
B-1/7	35-36.5	36	20	CL

200 WASH ANALYSIS

LOCATION	DEPTH (feet)	PERCENT PASSING #200 SIEVE	CLASSIFICATION
B-1/9	45-46.5	14	SM
B-4/4	20-21	20	SM
B-6/2	10-11.5	28	GC
B-7/4	25-26.5	17	GC

EXPANSION INDEX TEST

UBC 18-2

LOCATION	DEPTH (feet)	EXPANSION INDEX	EXPANSION POTENTIAL
B-2/Bag B	1-5	95	HIGH

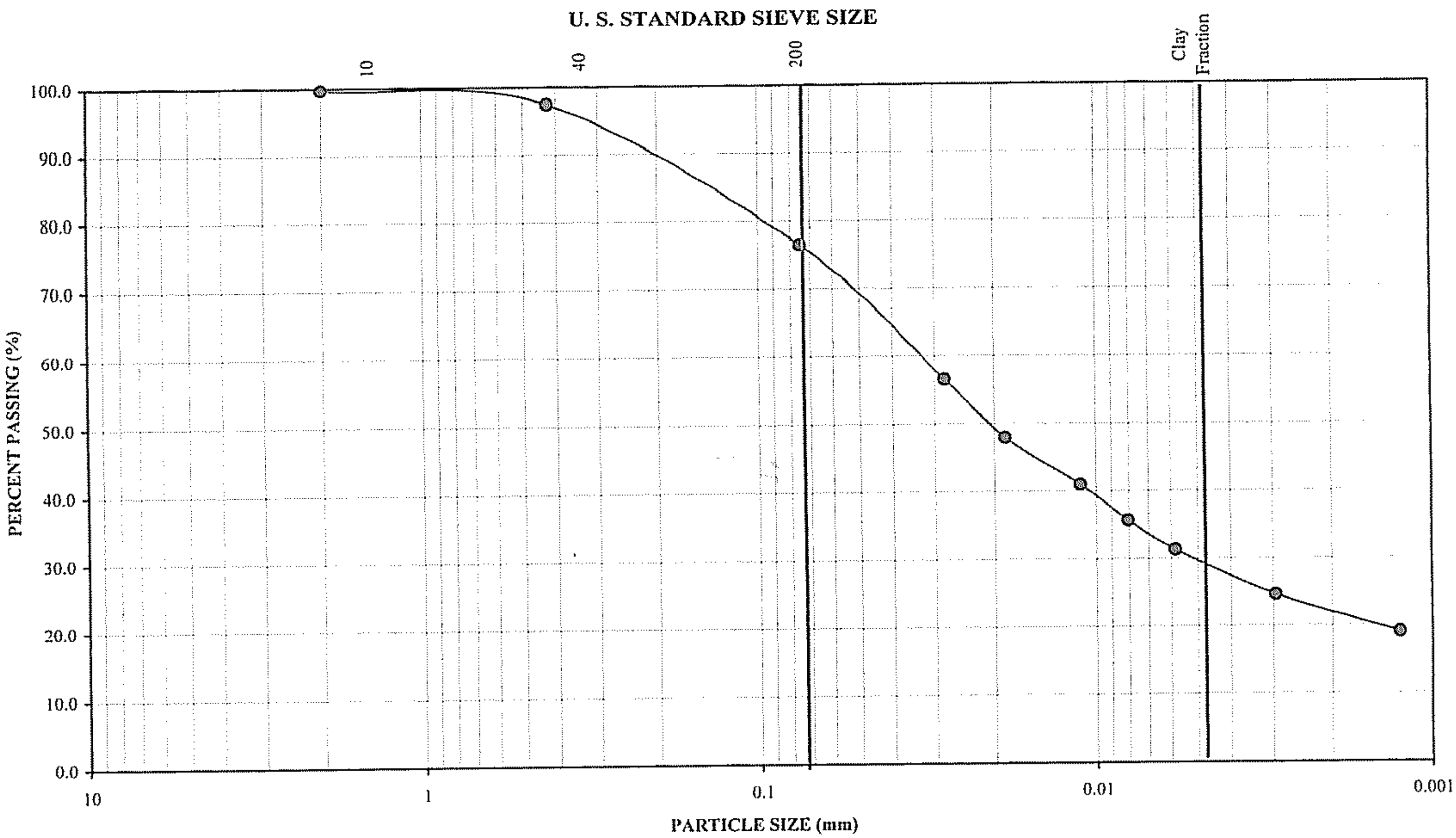
MOISTURE, DENSITY & UNCONFINED COMPRESSIVE STRENGTH

LOCATION	DEPTH (feet)	MOISTURE (%)	DRY DENSITY (pcf)	UNCONFINED COMPRESSIVE STRENGTH (psf)
B-1/1	5-6.5	16.6	98	11,808
B-1/2	10-11.5	14.9	111	4,752
B-1/3	15-16.5	24.5	101	3,600
B-1/4	20-21.5	25.3	101	5,904
B-1/5	25-26.5	22.0	109	4,752
B-1/6	30-31.5	22.8	105	4,752
B-1/7	35-36.5	23.7	105	1,152
B-1/8	40-41.5	18.0	116	3,600
B-2/1	3-4.5	19.2	97	10,512
B-3/1	2-3.5	18.0	94	12,960
B-3/2	5-6.5	17.3	105	11,808
B-3/3	10-11.5	21.4	101	2,304
B-5/1	5-6.5	12.6	116	28,224
B-5/3	15-16.5	27.3	94	3,600
B-5/4	20-21.5	23.8	103	2,304
B-7/1	5-6.5	15.7	109	9,360
B-7/2	15-16.5	21.0	103	5,904
B-7/3	20-21.5	25.1	99	3,600
B-7/4	25-26.5	10.4	128	--

RESISTANCE "R"-VALUE

CAL TEST 301

LOCATION	DEPTH (feet)	"R" VALUE
B-8/Bag E	1-4	25



PARTICLE SIZE ANALYSIS

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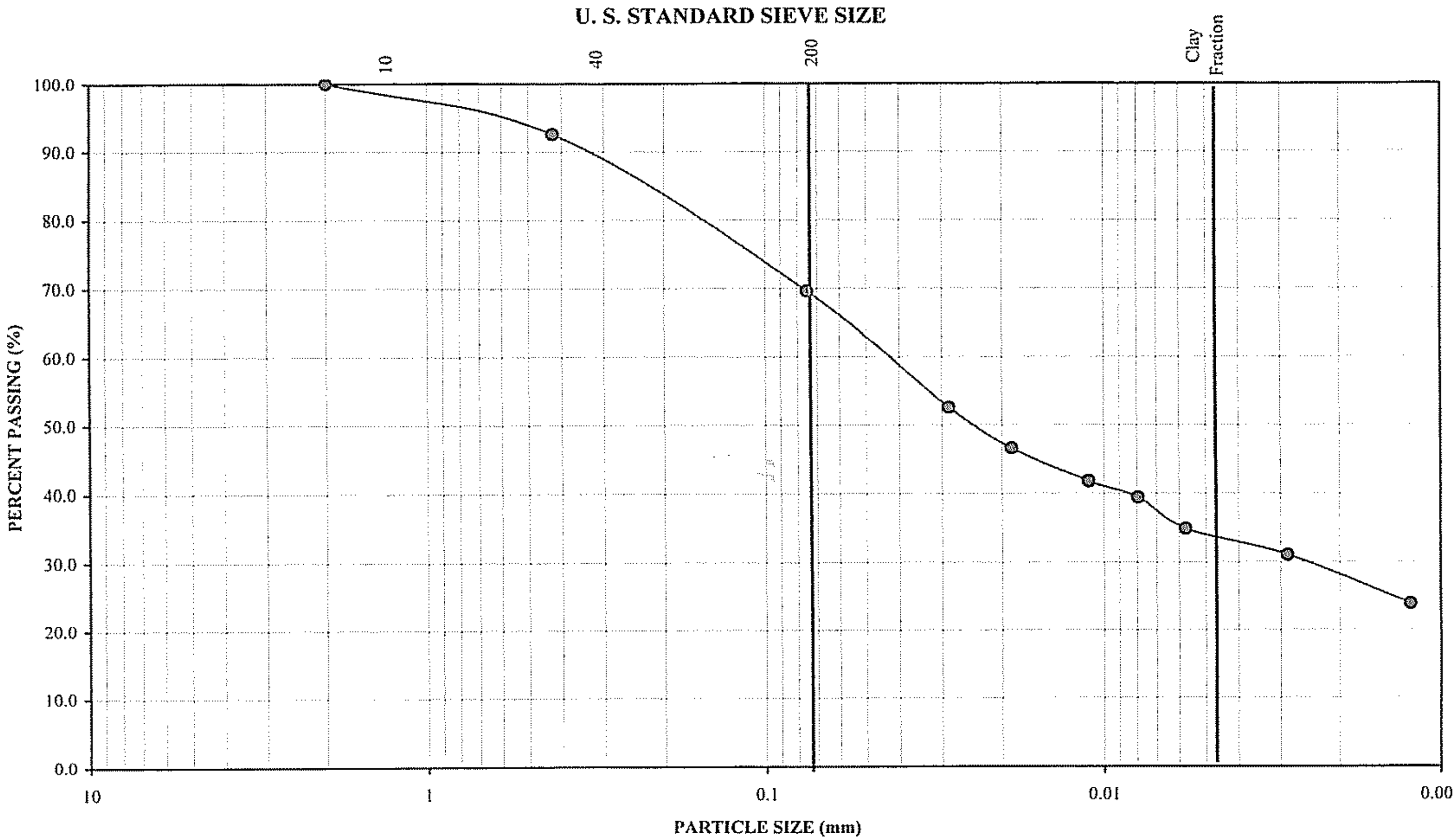
GEOTECHNICAL AND CONSTRUCTION ENGINEERING TESTING AND INSPECTION
2414 VINEYARD AVENUE, SUITE G ESCONDIDO CA. 92029 (760) 746-4955

Sample Designation	Sample Depth (feet)	Symbol
B-1/5	25-26.5	●

Note: 76.3% passing #200 sieve

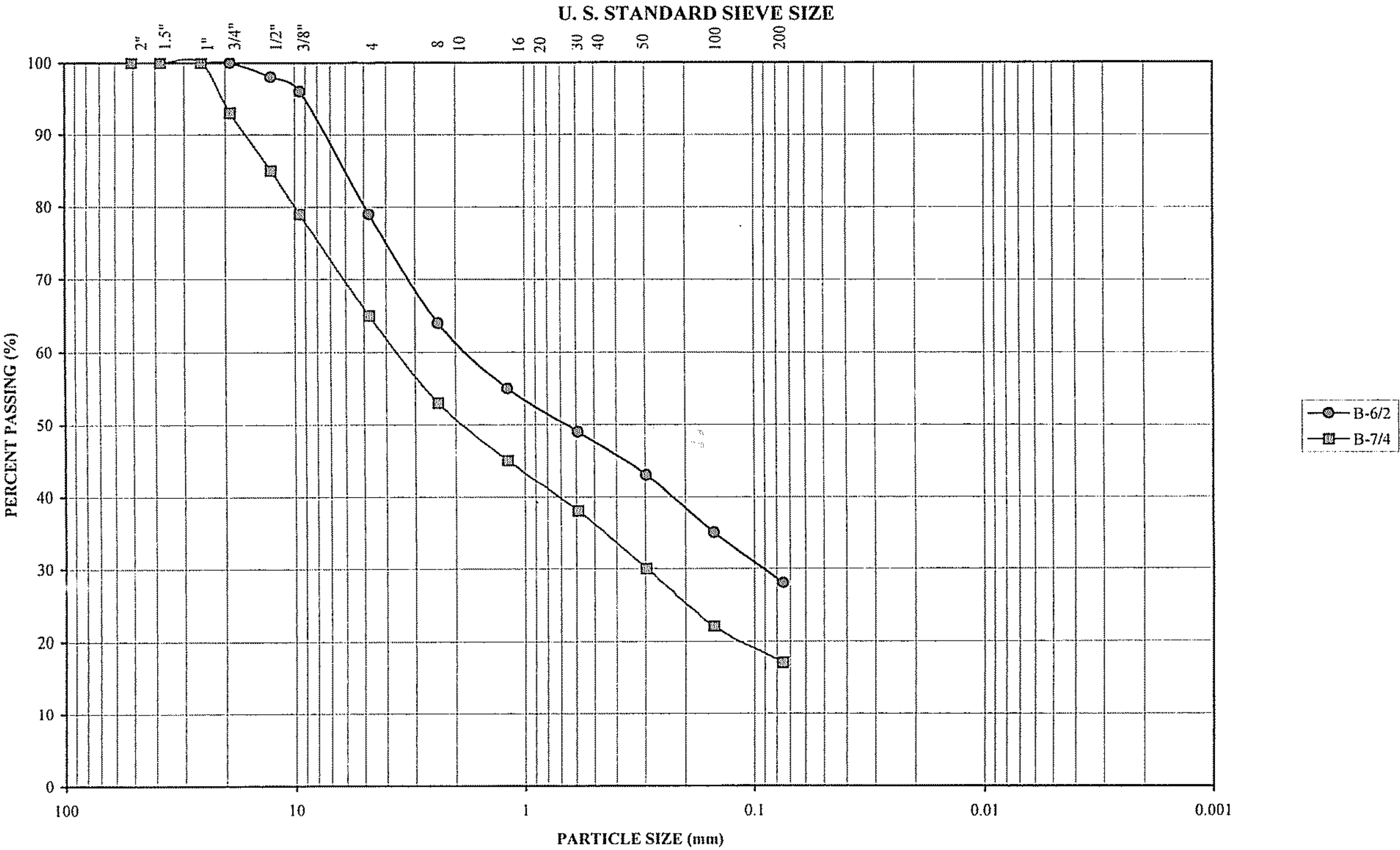
Job number 20-1926



PARTICLE SIZE ANALYSIS

CONSTRUCTION TESTING & ENGINEERING, INC.
GEOTECHNICAL AND CONSTRUCTION ENGINEERING TESTING AND INSPECTION
2414 VINEYARD AVENUE, SUITE G ESCONDIDO CA. 92029 (760) 746-4955

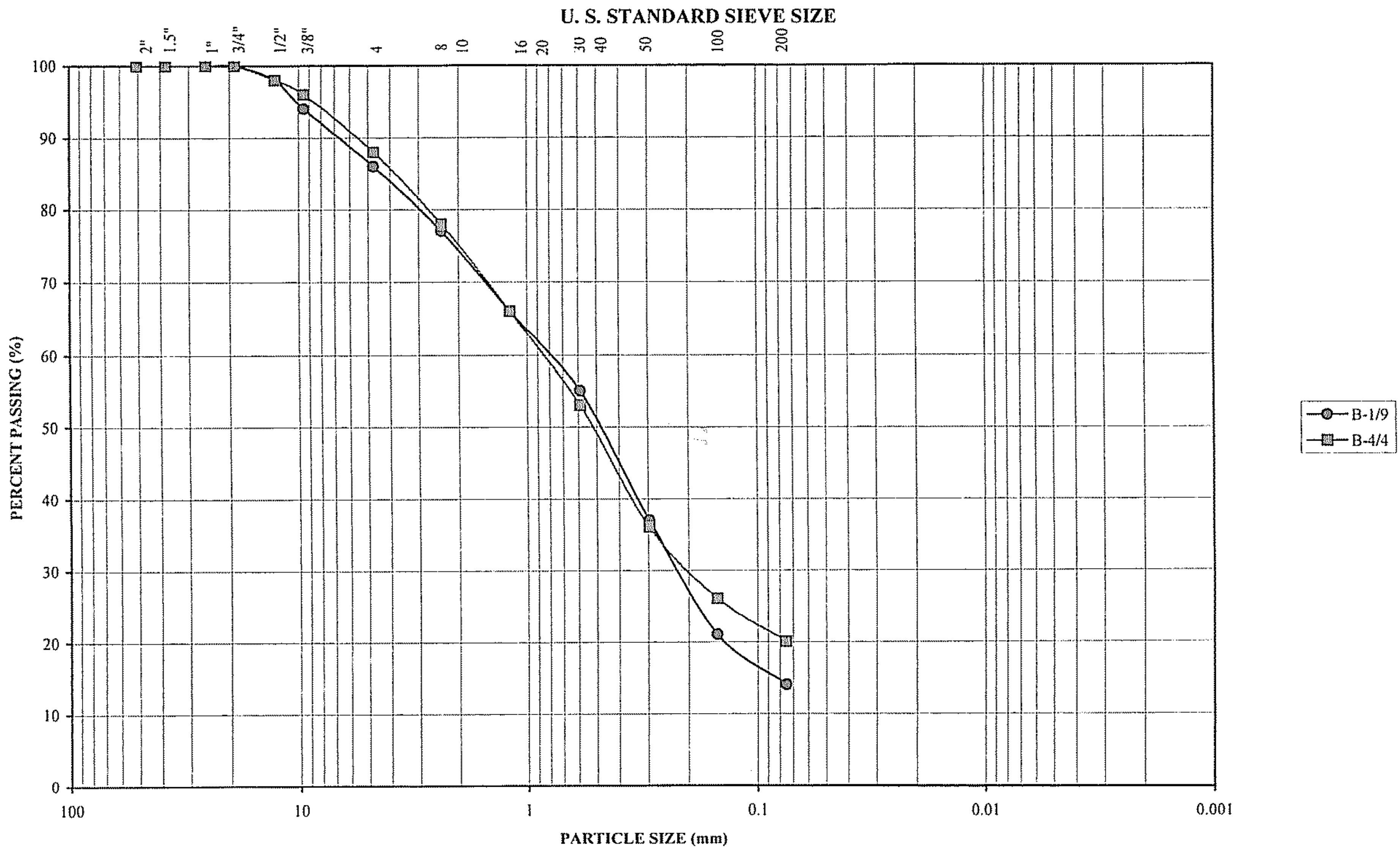
Sample Designation	Sample Depth (feet)	Symbol		
B-1/7	35-36.5	●		
	Note: 69.6% passing #200 sieve			
Job number	20-1926			



PARTICLE SIZE ANALYSIS

CONSTRUCTION TESTING & ENGINEERING, INC.
GEOTECHNICAL AND CONSTRUCTION ENGINEERING TESTING AND INSPECTION
2414 VINEYARD AVENUE, SUITE G ESCONDIDO CA. 92029 (760) 746-4955

Sample Designation	Sample Depth (feet)	Symbol	Liquid Limit (%)	Plasticity Index	Classification
B-6/2	10-11.5	●	-	-	-
B-7/4	25-26.5	■	-	-	-
CTE JOB NUMBER:		20-1926		FIGURE:	C-2



PARTICLE SIZE ANALYSIS

CONSTRUCTION TESTING & ENGINEERING, INC.
GEOTECHNICAL AND CONSTRUCTION ENGINEERING TESTING AND INSPECTION
2414 VINEYARD AVENUE, SUITE G ESCONDIDO CA 92029 (760) 746-4955

Sample Designation	Sample Depth (feet)	Symbol	Liquid Limit (%)	Plasticity Index	Classification
B-1/9	45-46.5	●	-	-	-
B-4/4	20-21	■	-	-	-
CTE JOB NUMBER:		20-1926		FIGURE:	C-1

APPENDIX D

STANDARD SPECIFICATIONS FOR GRADING

Section 1 - General

The guidelines contained herein represent Construction Testing & Engineering's standard recommendations for grading and other associated operations on construction projects. These guidelines should be considered a portion of the project specifications. Recommendations contained in the body of the previously presented soils report shall supersede the recommendations and or requirements as specified herein. The project geotechnical consultant shall interpret disputes arising out of interpretation of the recommendations contained in the soils report or specifications contained herein.

Section 2 - Responsibilities of Project Personnel

The geotechnical consultant should provide observation and testing services sufficient to assure that geotechnical construction is performed in general conformance with project specifications and standard grading practices. The geotechnical consultant should report any deviations to the client or his authorized representative.

The Client should be chiefly responsible for all aspects of the project. He or his authorized representative has the responsibility of reviewing the findings and recommendations of the geotechnical consultant. He shall authorize or cause to have authorized the Contractor and/or other consultants to perform work and/or provide services. During grading the Client or his authorized representative should remain on-site or should remain reasonably accessible to all concerned parties in order to make decisions necessary to maintain the flow of the project.

The Contractor should be responsible for the safety of the project and satisfactory completion of all grading and other associated operations on construction projects, including, but not limited to, earth work in accordance with the project plans, specifications and controlling agency requirements.

Section 3 - Preconstruction Meeting

A preconstruction site meeting shall be arranged by the owner and/or client and shall include the grading contractor, the design engineer, the geotechnical consultant, owner's representative and representatives of the appropriate governing authorities.

Section 4 - Site Preparation

The client or contractor should obtain the required approvals from the controlling authorities for the project prior, during and/or after demolition, site preparation and removals, etc. The appropriate approvals should be obtained prior to proceeding with grading operations.

Clearing and grubbing should consist of the removal of vegetation such as brush, grass, woods, stumps, trees, root of trees and otherwise dele terious natural m aterials from the areas to be graded. Clearing and grubbing should extend to the outside of all proposed excavation and fill areas.

Demolition should include removal of buildings, structures, foundations, reservoirs, utilities (including underground pipelines, septic tanks, leach fields, seepage pits, cisterns, mining shafts, tunnels, etc.) and other man-made surface and subsurface improvements from the areas to be graded. Demolition of utilities should include proper capping and/or rerouting pipelines at the project perimeter and cutoff and capping of wells in accordance with the requirements of the governing authorities and the recommendations of the geotechnical consultant at the time of demolition.

Trees, plants or man-made improvements not planned to be removed or demolished should be protected by the contractor from damage or injury.

Debris generated during clearing, grubbing and/or demolition operations should be wasted from areas to be graded and disposed off-site. Clearing, grubbing and demolition operations should be performed under the observation of the geotechnical consultant.

<u>Section 5 - Site Protection</u>

Protection of the site during the period of grading should be the responsibility of the contractor. Unless other provisions are made in writing and agreed upon among the concerned parties, completion of a portion of the project should not be considered to preclude that portion or adjacent areas from the requirements for site protection until such time as the entire project is complete as identified by the geotechnical consultant, the client and the regulating agencies.

Precautions should be taken during the performance of site clearing, excavations and grading to protect the work site from flooding, ponding or inundation by poor or improper surface drainage. Temporary provisions should be made during the rainy season to adequately direct surface drainage away from and off the work site. Where low areas cannot be avoided, pumps should be kept on hand to continually remove water during periods of rainfall.

Rain related damage should be considered to include, but may not be lim ited to, erosion, silting, saturation, swelling, structural distress and ot her adverse conditions as determined by the geotechnical consultant. Soil adversely affected should be classified as unsuitable materials and should be subject to overexcavation and replacement with compacted fill or other remedial grading as recommended by the geotechnical consultant.

The contractor should be responsible for the stability of all temporary excavations. Recommendations by the geotechnical consultant pertaining to temporary excavations (e.g., backcuts) are made in consideration of stability of the completed project and, therefore, should not be considered to preclude the responsibilities of the contractor. Recommendations by the geotechnical consultant should not be considered to preclude requirements that are more restrictive by the regulating agencies. The contractor should provide during periods of extensive rainfall plastic sheeting to prevent unprotected slopes from becoming saturated and unstable. When deemed appropriate by the geotechnical consultant or governing agencies the contractor shall install checkdams, desilting basins, sand bags or other drainage control measures.

In relatively level areas and/or slope areas, where saturated soil and/or erosion gullies exist to depths of greater than 1.0 foot; they should be overexcavated and replaced as compacted fill in accordance with the applicable specifications. Where affected materials exist to depths of 1.0 foot or less below proposed finished grade, remedial grading by moisture conditioning in-place, followed by thorough recompaction in accordance with the applicable grading guidelines herein may be attempted. If the desired results are not achieved, all affected materials should be overexcavated and replaced as compacted fill in accordance with the slope repair recommendations herein. If field conditions dictate, the geotechnical consultant may recommend other slope repair procedures.

Section 6 - Excavations

6.1 Unsuitable Materials

Materials that are unsuitable should be excavated under observation and recommendations of the geotechnical consultant. Unsuitable materials include, but may not be limited to, dry, loose, soft, wet, organic compressible natural soils and fractured, weathered, soft bedrock and nonengineered or otherwise deleterious fill materials.

Material identified by the geotechnical consultant as unsatisfactory due to its moisture conditions should be overexcavated; moisture conditioned as needed, to a uniform at or above optimum moisture condition before placement as compacted fill.

If during the course of grading adverse geotechnical conditions are exposed which were not anticipated in the preliminary soil report as determined by the geotechnical consultant additional exploration, analysis, and treatment of these problems may be recommended.

6.2 Cut Slopes

Unless otherwise recommended by the geotechnical consultant and approved by the regulating agencies, permanent cut slopes should not be steeper than 2:1 (horizontal: vertical).

The geotechnical consultant should observe cut slope excavation and if these excavations expose loose cohesionless, significantly fractured or otherwise unsuitable material, the materials should be overexcavated and replaced with a compacted stabilization fill. If encountered specific cross section details should be obtained from the Geotechnical Consultant.

When extensive cut slopes are excavated or these cut slopes are made in the direction of the prevailing drainage, a non-erodible diversion swale (brow ditch) should be provided at the top of the slope.

6.3 Pad Areas

All lot pad areas, including side yard terrace containing both cut and fill materials, transitions, located less than 3 feet deep should be overexcavated to a depth of 3 feet and replaced with a uniform compacted fill blanket of 3 feet. Actual depth of overexcavation may vary and should be delineated by the geotechnical consultant during grading, especially where deep or drastic transitions are present.

For pad areas created above cut or natural slopes, positive drainage should be established away from the top-of-slope. This may be accomplished utilizing a berm drainage swale and/or an appropriate pad gradient. A gradient in soil areas away from the top-of-slopes of 2 percent or greater is recommended.

Section 7 - Compacted Fill

All fill materials should have fill quality, placement, conditioning and compaction as specified below or as approved by the geotechnical consultant.

7.1 Fill Material Quality

Excavated on-site or import materials which are acceptable to the geotechnical consultant may be u tilized as compacted fill, provided trash, vegetation and other deleterious materials are removed prior to placement. All import materials anticipated for use on-site should be sampled tested and approved prior to and placement is in conformance with the requirements outlined.

Rocks 12 inches in maximum and smaller may be utilized within compacted fill provided sufficient fill material is placed and thoroughly compacted over and around all rock to effectively fill rock voids. The amount of rock should not exceed 40 percent by dry weight passing the 3/4-inch sieve. The geotechnical consultant may vary those requirements as field conditions dictate.

Where rocks greater than 12 inches but less than four feet of maximum dimension are generated during grading, or otherwise desired to be placed with in an engineered fill, special h andling i n accorda nce with the r ecommendations below. Rocks greater than four feet should be broken down or disposed off-site.

7.2 Placement of Fill

Prior to placement of fill material, the ge otechnical consultant should observe and approve the area to receive fill. A fter obs ervation and approval, the exposed ground surface should be scarified to a depth of 6 to 8 inches. The scarified material should be conditioned (i.e. moisture added or air dried by continued discing) to achieve a moisture content at or slightly above optimum moisture conditions and compacted to a minimum of 90 percent of the maximum density or as otherwise recommended in the soils report or by appropriate government agencies.

Compacted fill should then be placed in thin horizontal lifts not exceeding eight inches in loose thickness prior to compaction. Each lift should be moisture conditioned as needed, thoroughly blended to achieve a consistent moisture content at or slightly above optimum and thoroughly compacted by mechanical me thods to a minimum of 90 percent of laboratory maximum dry density. Each lift should be treated in a like manner until the desired finished grades are achieved.

The contractor should have suitable and suffi cient mechanical compaction equipment and watering apparatus on the job site to handle the amount of fill being placed in consideration of moisture retention properties of the materials and weather conditions.

When placing fill in horizontal lifts adjacent to areas sloping steeper than 5:1 (horizontal: vertical), horizontal keys and vertical benches should be excavated into the adjacent slope area. Keying and benching should be sufficient to provide at least six-foot wide benches and a minimum of four feet of vertical bench height within the firm natural ground, firm bedrock or engineered compacted fill. No compacted fill should be placed in an area after keying and benching until the geotechnical consultant has reviewed the area. Material generated by the benching operation should be moved sufficiently away from the bench area to allow for the recommended review of the horizontal bench prior to placement of fill.

Within a single fill area where grading procedures dictate two or more separate fills, temporary slopes (false slopes) may be created. When placing fill adjacent to a false slope, benching should be conducted in the same manner as above described. At least a 3-foot vertical bench should be establi shed wit hin the firm core of adjacent approved compacted fill prior to placement of additional fill. Benching should proceed in at least 3-foot vertical increments until the desired finished grades are achieved.

Prior to placement of additional compacted fill following an overnight or other grading delay, the exposed surface or previously compacted fill should be processed by scarification, moisture conditioning as needed to at or slightly above optimum moisture content, thoroughly blended and recompacted to a minimum of 90 percent of laboratory maximum dry density. Where unsuitable materials exist to depths of greater than one foot, the unsuitable materials should be over-excavated.

Following a period of flooding, rainfall or overwatering by other means, no additional fill should be placed until damage assessments have been made and remedial grading performed as described herein.

Rocks 12 inch in maximum dimension and smaller may be utilized in the compacted fill provided the fill is placed and thoroughly co mpacted over and around all rock. No oversize material should be used within 3 feet of finished pad grade and within 1 foot of other compacted fill areas. Rocks 12 inches up to four feet maximum dimension should be placed below the upper 10 feet of any fill and should not be closer than 15 feet to any slope face. These recommendations could vary as locations of improvements dictate. Where practical, oversized material should not be placed below areas where structures or deep utilities are proposed. Oversized material should be placed in windrows on a clean, overexcavated or unyieldin g compacted fill or firm natural ground surface. Select native or imported granular soil (S.E. 30 or higher) should be placed and thoroughly flooded over and around all windrowed rock, such that voids are filled. Windrows of oversized material should be staggered so those successive strata of oversized material are not in the same vertical plane.

It may be possible to dispose of individual larger rock as field conditions dictate and as recommended by the geotechnical consu ltant at the time of placement.

The contractor should assist the geotechnical consultant and/or his representative by digging test pits for removal determinations and/or for testing compacted fill. The contractor s hould provide this work at no ad ditional cost to the owner or contractor's client.

Fill should be tested by the geotechnical consultant for compliance with the recommended relative compaction and moisture conditions. Field density testing should conform to ASTM Method of Test D 1556-00, D 2922-04. Tests should be conducted at a minimum of approximately two vertical feet or approximately 1,000 to 2,000 cubic yards of fill placed. Actual test intervals may vary as field conditions dictate. Fill found not to be in conformance with the grading recommendations should be removed or otherwise handled as recommended by the geotechnical consultant.

7.3 Fill Slopes

Unless otherwise recommended by the geotec hnical consultant and approved by the regulating agencies, permanent fill slopes should not be steeper than 2:1 (horizontal: vertical).

Except as specifically recommended in these grading guidelines com pacted fill slopes should be over-built two to five feet and cut back to grade, exposing the firm, compacted fill inner core. The actual amount of overbuilding may vary as field conditions dictate. If the desired results are not achieved, the existing slopes should be overexcavated and reconstructed under the guidelines of the geotechnical consultant. The degree of overbuilding shall be increased until the desired compacted slope surface condition is achieved. Care should be taken by the cont ractor to provide thorough mechanical compaction to the outer edge of the overbuilt slope surface.

At the discretion of the geotechnical consultant, slope face compaction may be attempted by conventional construction procedures in cluding backrolling. The procedure must create a firmly compacted material throughout the entire depth of the slope face to the surface of the previously compacted firm fill intercore.

During grading operations, care should be taken to extend compactive effort to the outer edge of the slope. Each lift should extend horizontally to the desired finished slope surface or mor e as needed to ultimately est ablished desired grades. Grade during construction should not be allowed to roll off at the edge of the slope. It may be helpful to elevate slightly the outer edge of the slope. Slough resulting from the placement of individual lifts should not be allowed to drift down over previous lifts. At intervals not exceeding four feet in vertical slope height or the capability of available equipment, whichever is less, fill slopes should be thoroughly dozer trackrolled.

For pad areas above fill slopes, positive drainage should be established away from the top-of-slope. This may be accomplished using a berm and pad gradient of at least two percent.

Section 8 - Trench Backfill

Utility and/or other excavation of trench backfill should, unless otherwise recommended, be compacted by mechanical means. Unless otherwise recommended, the degree of compaction should be a minimum of 90 percent of the laboratory maximum density.

Within slab areas, but outside the influence of foundations, trenches up to one foot wide and two feet deep may be backfilled with sand and consolidated by jetting, flooding or by mechanical means. If on-site materials are utilized, they should be wheel-rolled, tamped or otherwise compacted to a firm condition. For minor interior trenches, density testing may be deleted or spot testing may be elected if deemed necessary, based on review of backfill operations during construction.

If utility contractors indicate that it is undesirable to use compaction equipment in close proximity to a buried conduit, the contractor may elect the utilization of light weight mechanical compaction equipment and/or shading of the conduit with clean, granular material, which should be thoroughly jetted in-place above the conduit, prior to initiating mechanical compaction procedures. Other methods of utility trench compaction may also be appropriate, upon review of the geotechnical consultant at the time of construction.

In cases where clean granular materials are proposed for use in lieu of native materials or where flooding or jetting is proposed, the procedures should be considered subject to review by the geotechnical consultant. Clean granular backfill and/or bedding are not recommended in slope areas.

Section 9 - Drainage

Where deemed appropriate by the geotechnical consultant, canyon subdrain systems should be installed in accordance with CTE's recommendations during grading.

Typical subdrains for compacted fill buttresses, slope stabilization or sidehill masses, should be installed in accordance with the specifications.

Roof, pad and slope drainage should be directed away from slopes and areas of structures to suitable disposal areas via non-erodible devices (i.e., gutters, downspouts, and concrete swales).

For drainage in extensively landscaped areas near structures, (i.e., within four feet) a minimum of 5 percent gradient away from the structure should be maintained. Pad drainage of at least 2 percent should be maintained over the remainder of the site.

Drainage patterns established at the time of fine grading should be maintained throughout the life of the project. Property owners should be made aware that altering drainage patterns could be detrimental to slope stability and foundation performance.

Section 10 - Slope Maintenance

10.1 - Landscape Plants
To enhance surficial slope stability, slope planting should be accomplished at the completion of grading. Slope planting should consist of deep-rooting vegetation requiring little watering. Plants native to the southern California area and plants relative to native plants are generally desirable. Plants native to other semi-arid and arid areas may also be appropriate. A Landscape Architect should be the best party to consult regarding actual types of plants and planting configuration.

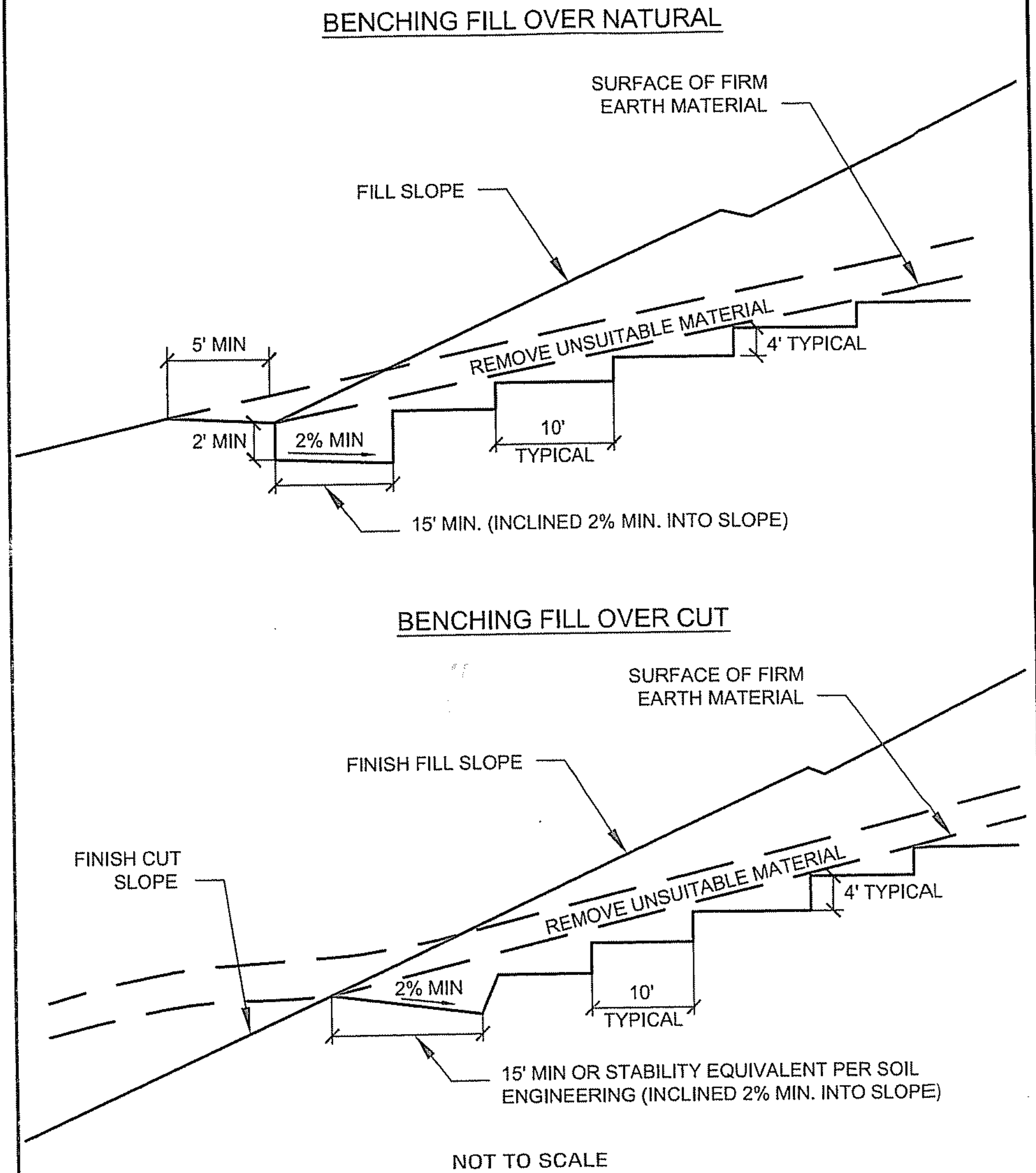
10.2 - Irrigation
Irrigation pipes should be anchored to slope faces, not placed in trenches excavated into slope faces.

Slope irrigation should be minimized. If automatic timing devices are utilized on irrigation systems, provisions should be made for interrupting normal irrigation during periods of rainfall.

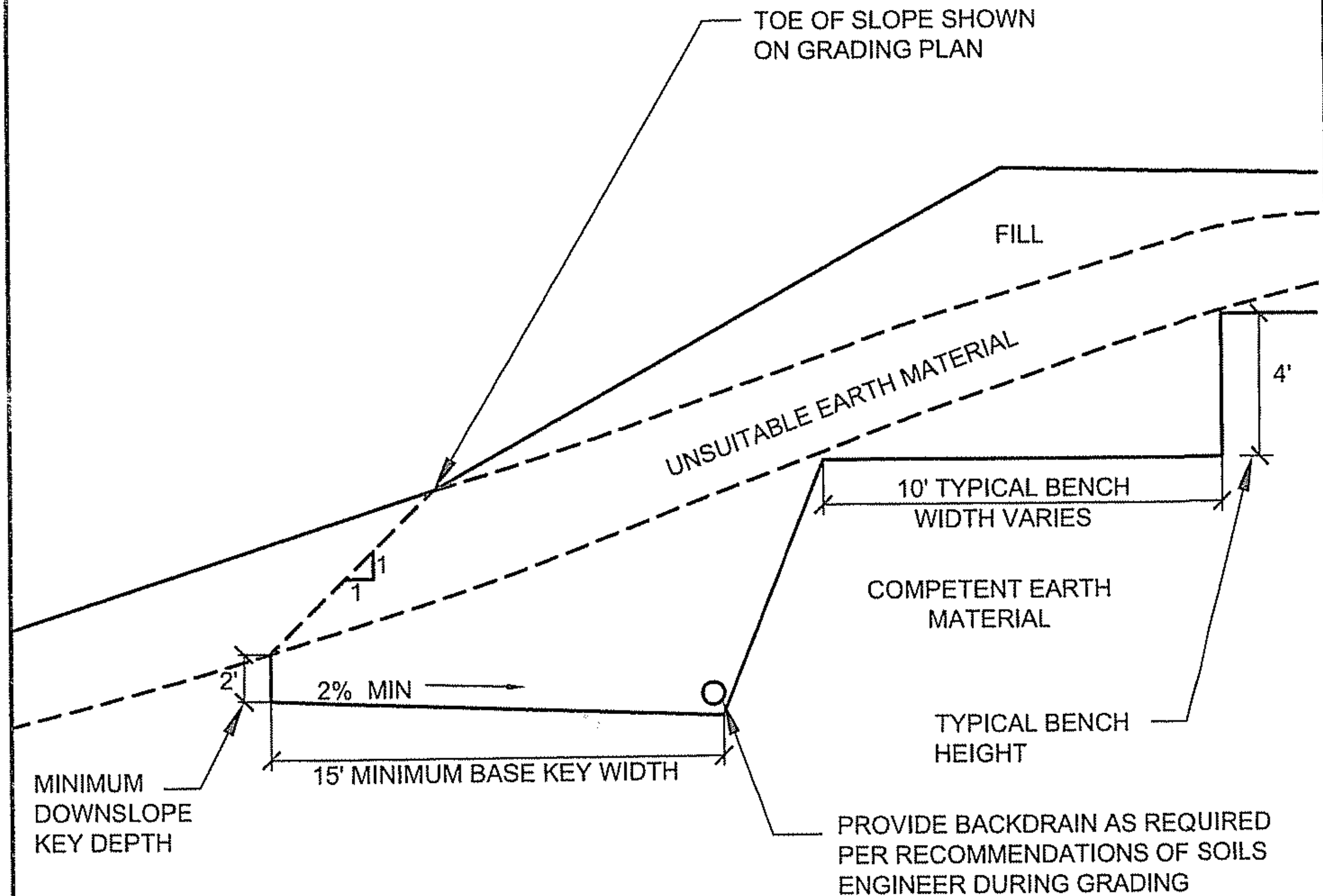
10.3 - Repair
As a precautionary measure, plastic sheeting should be readily available, or kept on hand, to protect all slope areas from saturation by periods of heavy or prolonged rainfall. This measure is strongly recommended, beginning with the period prior to landscape planting.

If slope failures occur, the geotechnical consultant should be contacted for a field review of site conditions and development of recommendations for evaluation and repair.

If slope failures occur as a result of exposure to period of heavy rainfall, the failure areas and currently unaffected areas should be covered with plastic sheeting to protect against additional saturation.
In the accompanying Standard Details, appropriate repair procedures are illustrated for superficial slope failures (i.e., occurring typically within the outer one foot to three feet of a slope face).



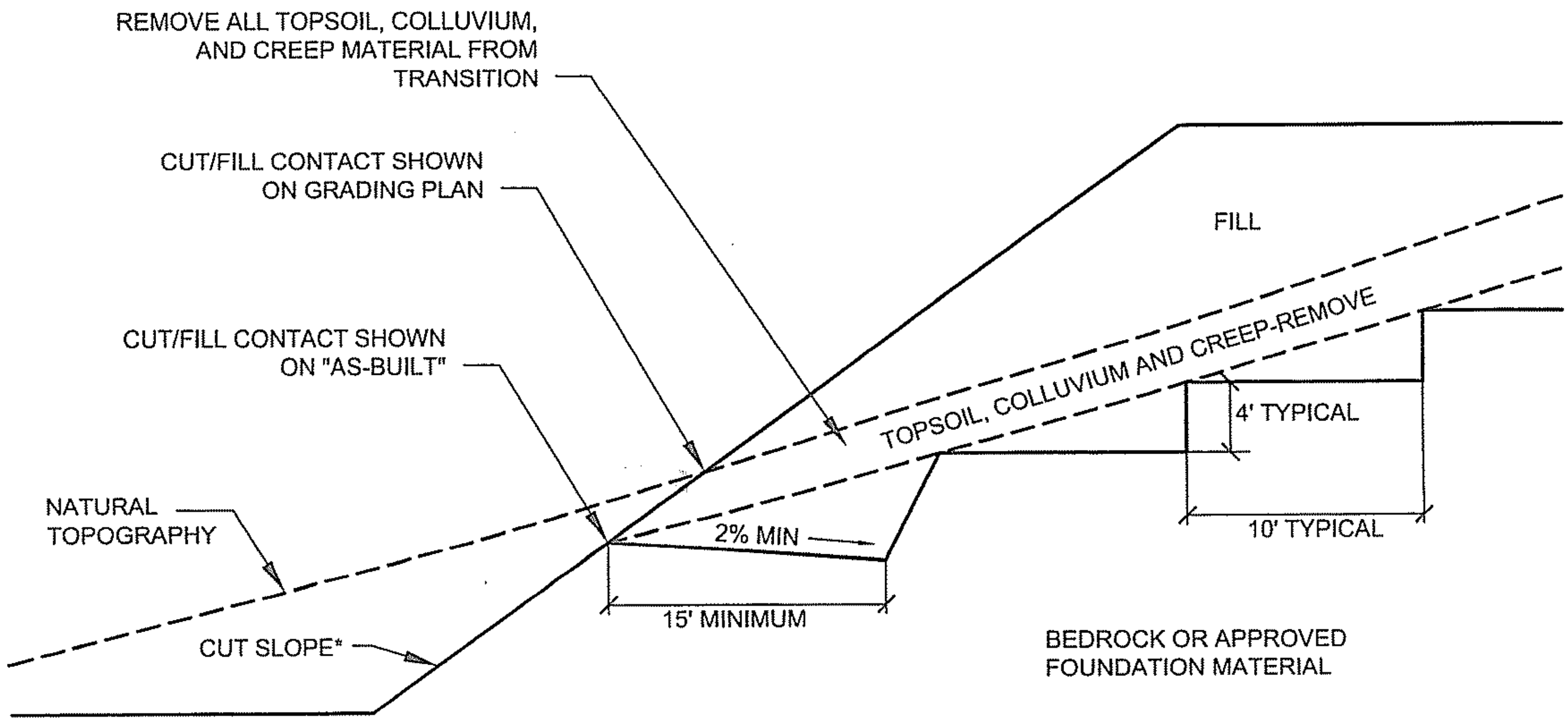
BENCHING FOR COMPACTED FILL DETAIL



WHERE NATURAL SLOPE GRADIENT IS 5:1 OR LESS, BENCHING IS NOT NECESSARY. FILL IS NOT TO BE PLACED ON COMPRESSIBLE OR UNSUITABLE MATERIAL.

NOT TO SCALE

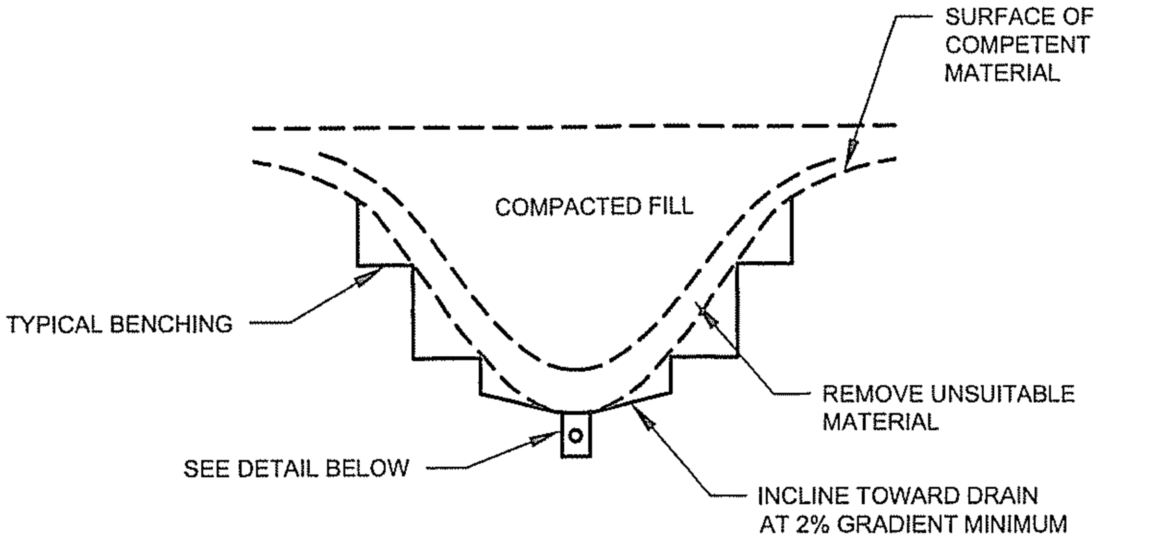
FILL SLOPE ABOVE NATURAL GROUND DETAIL



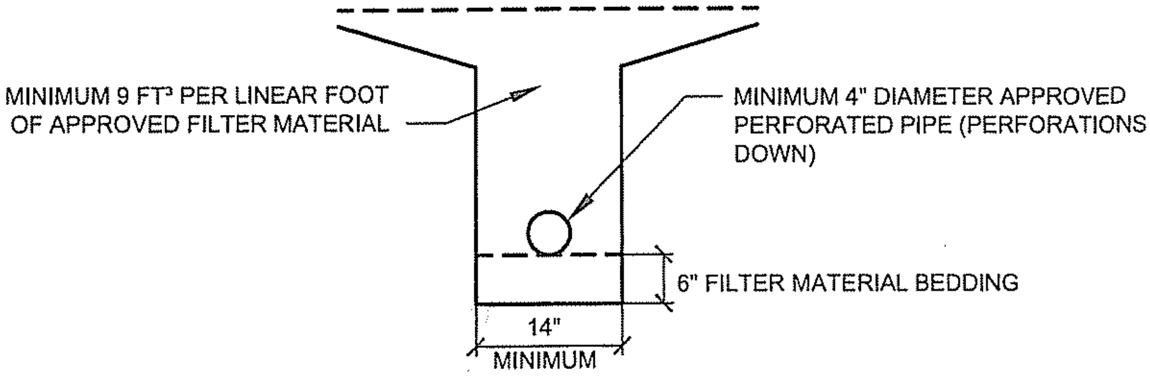
*NOTE: CUT SLOPE PORTION SHOULD BE MADE PRIOR TO PLACEMENT OF FILL

NOT TO SCALE

FILL SLOPE ABOVE CUT SLOPE DETAIL



DETAIL



FILTER MATERIAL TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUAL:

SIEVE SIZE	PERCENTAGE PASSING
1"	100
¾"	90-100
⅜"	40-100
NO. 4	25-40
NO. 30	18-33
NO. 8	5-15
NO. 50	0-7
NO. 200	0-3

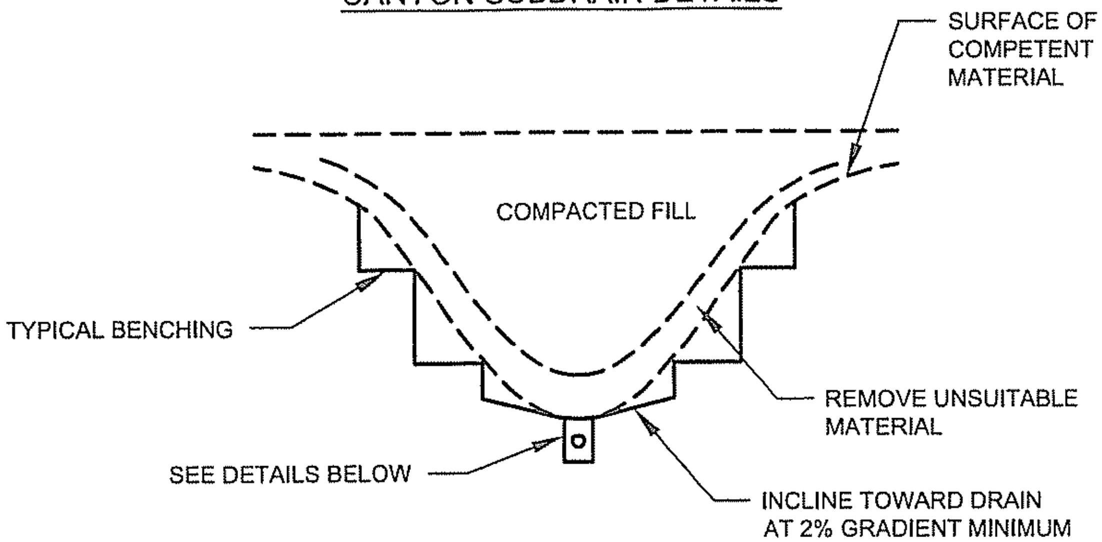
APPROVED PIPE TO BE SCHEDULE 40 POLY-VINYL-CHLORIDE (P.V.C.) OR APPROVED EQUAL. MINIMUM CRUSH STRENGTH 1000 psi

PIPE DIAMETER TO MEET THE FOLLOWING CRITERIA, SUBJECT TO FIELD REVIEW BASED ON ACTUAL GEOTECHNICAL CONDITIONS ENCOUNTERED DURING GRADING

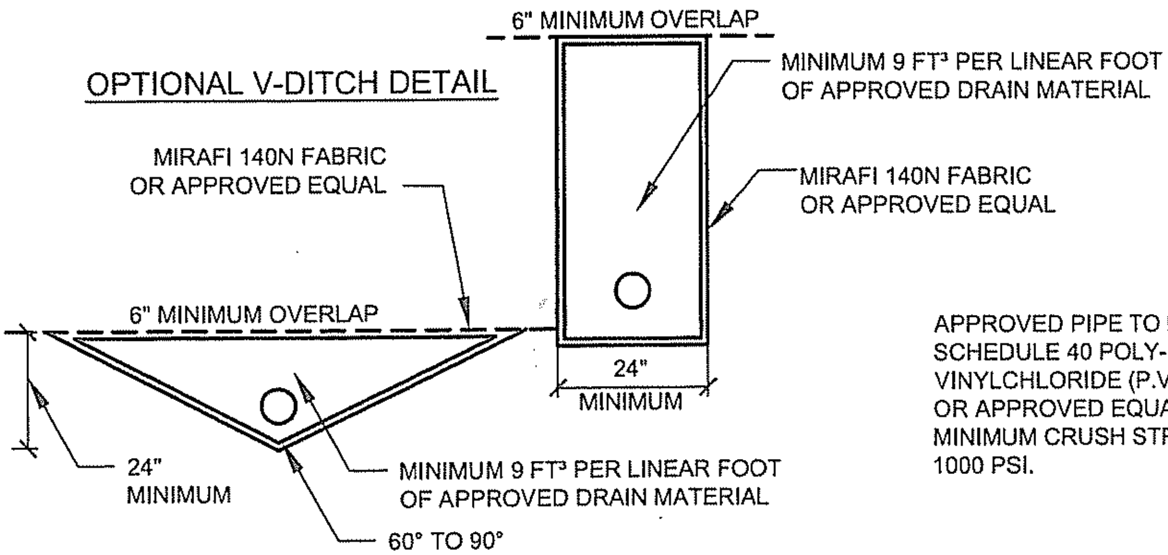
LENGTH OF RUN	PIPE DIAMETER
INITIAL 500'	4"
500' TO 1500'	6"
> 1500'	8"

NOT TO SCALE

TYPICAL CANYON SUBDRAIN DETAIL



TRENCH DETAILS



APPROVED PIPE TO BE SCHEDULE 40 POLY-VINYLCHLORIDE (P.V.C.) OR APPROVED EQUAL. MINIMUM CRUSH STRENGTH 1000 PSI.

DRAIN MATERIAL TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUAL:

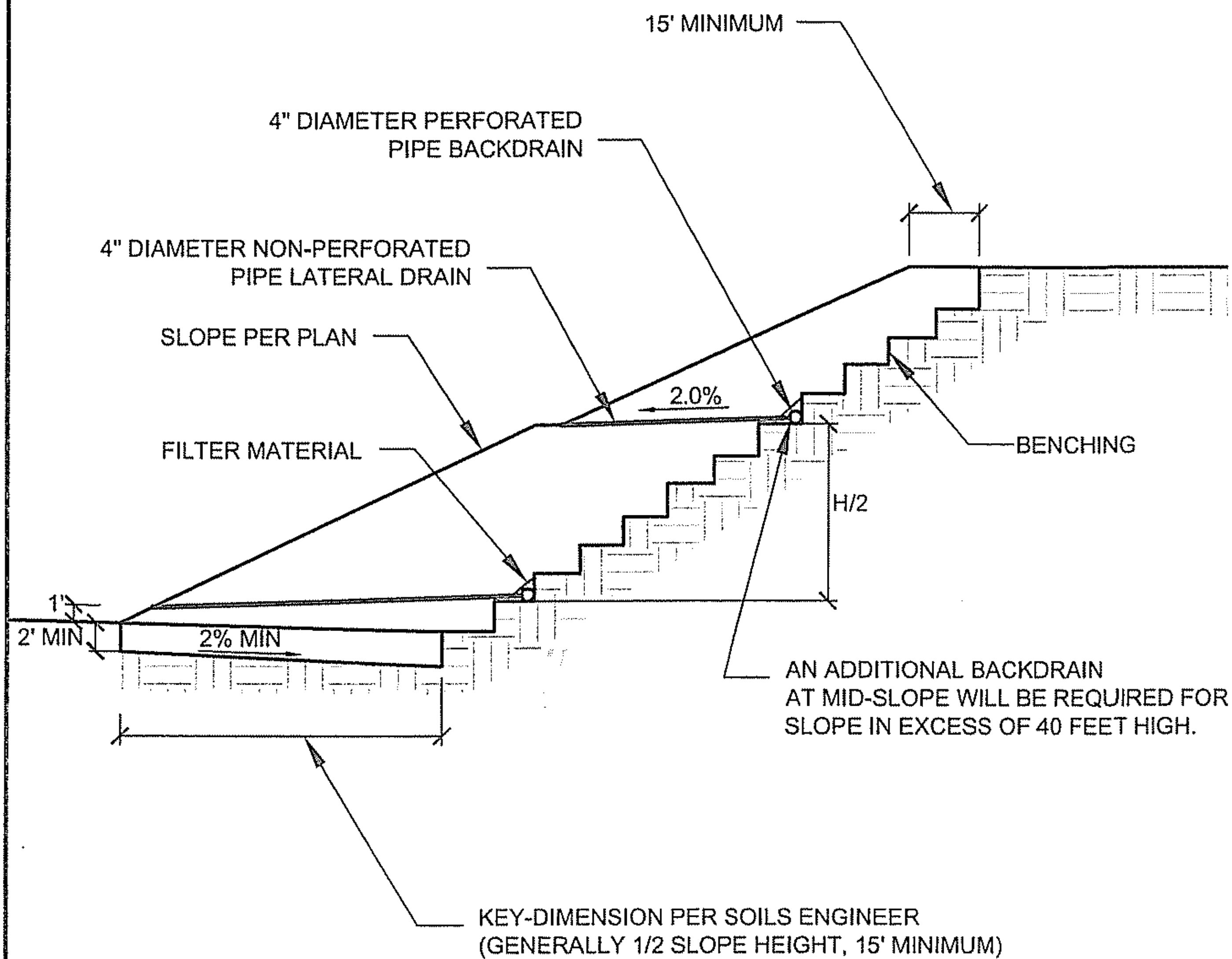
SIEVE SIZE	PERCENTAGE PASSING
1 ½"	88-100
1"	5-40
¾"	0-17
⅜"	0-7
NO. 200	0-3

PIPE DIAMETER TO MEET THE FOLLOWING CRITERIA, SUBJECT TO FIELD REVIEW BASED ON ACTUAL GEOTECHNICAL CONDITIONS ENCOUNTERED DURING GRADING

LENGTH OF RUN	PIPE DIAMETER
INITIAL 500'	4"
500' TO 1500'	6"
> 1500'	8"

NOT TO SCALE

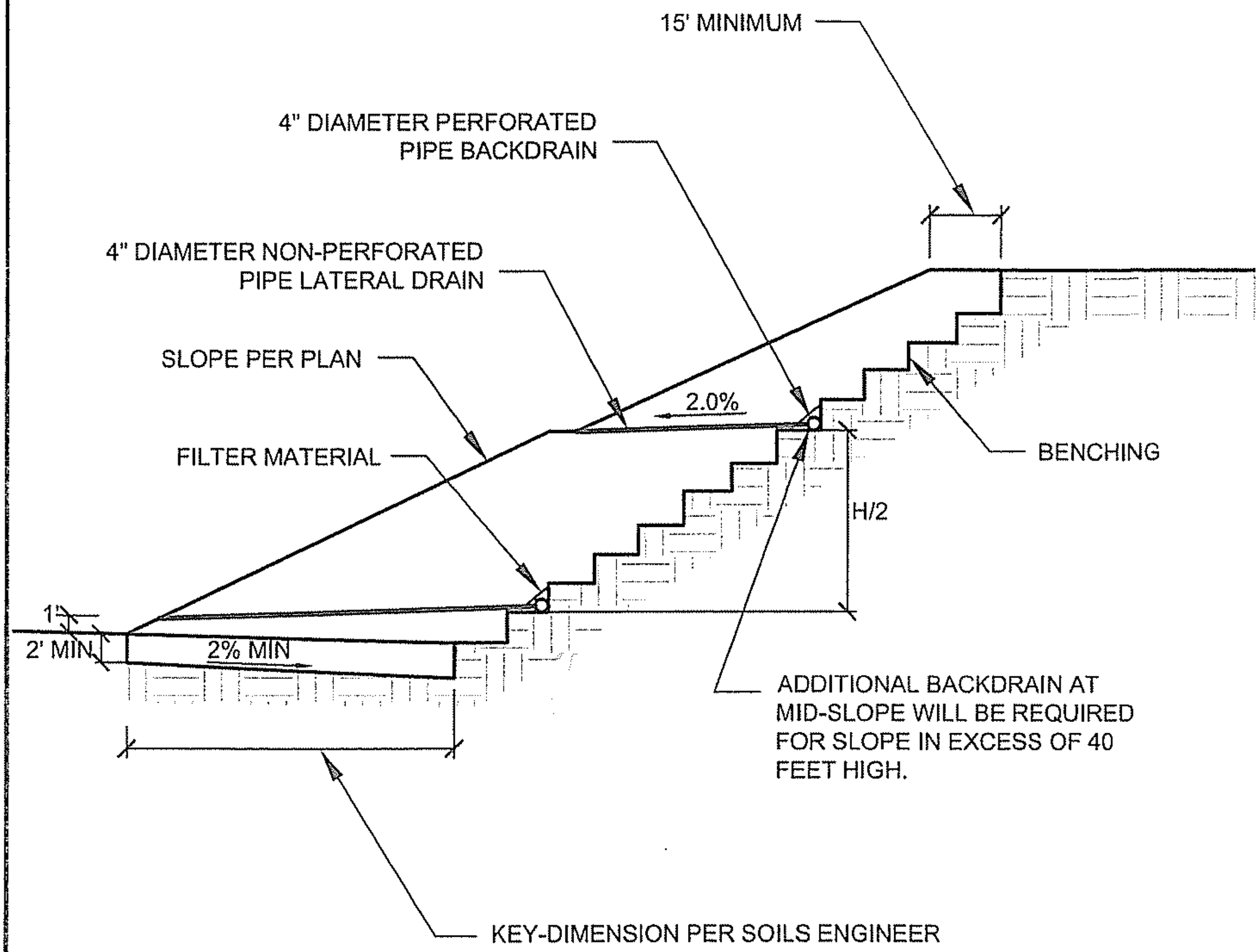
GEOFABRIC SUBDRAIN



DIMENSIONS ARE MINIMUM RECOMMENDED

NOT TO SCALE

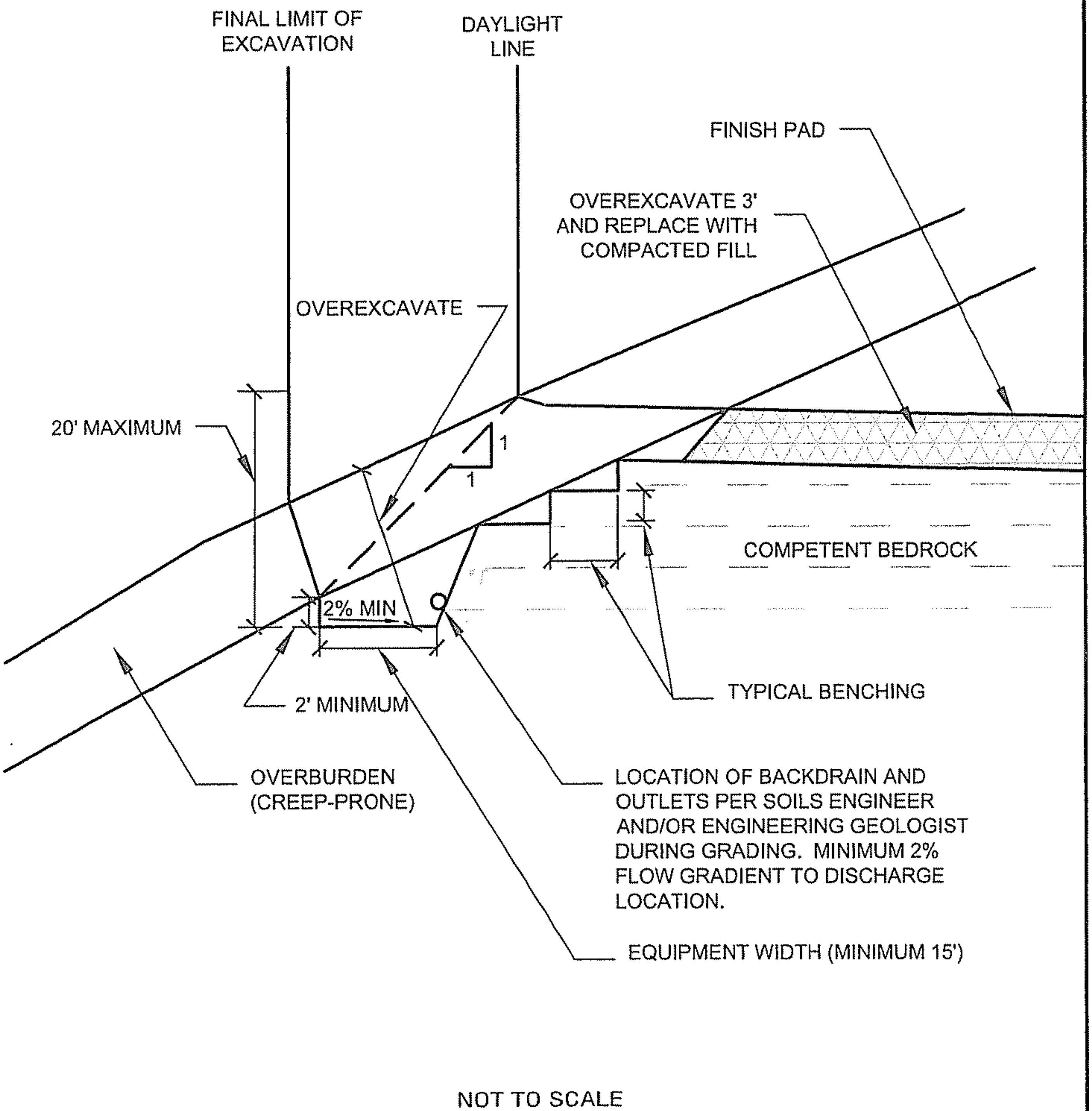
TYPICAL SLOPE STABILIZATION FILL DETAIL



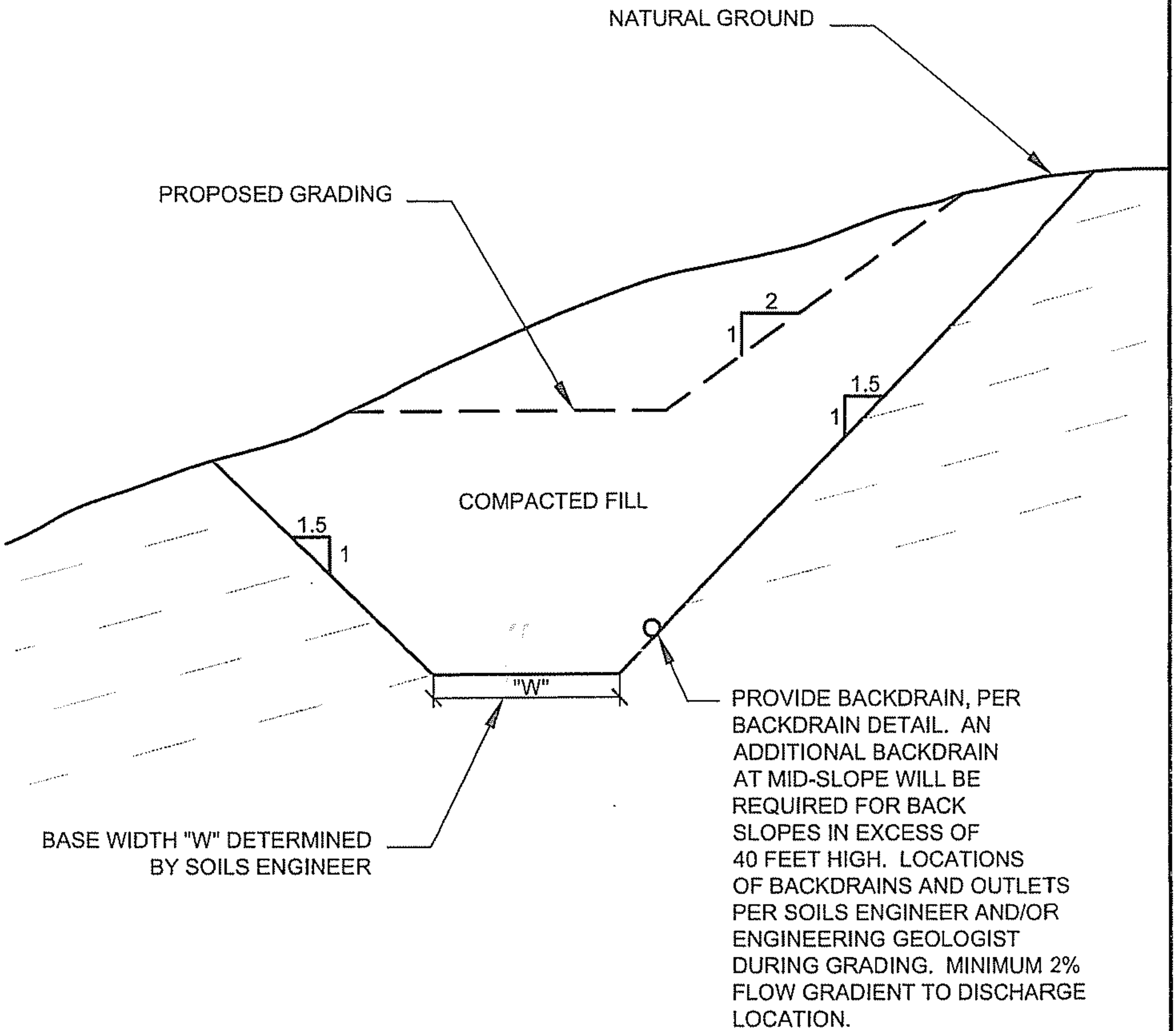
DIMENSIONS ARE MINIMUM RECOMMENDED

NOT TO SCALE

TYPICAL BUTTRESS FILL DETAIL

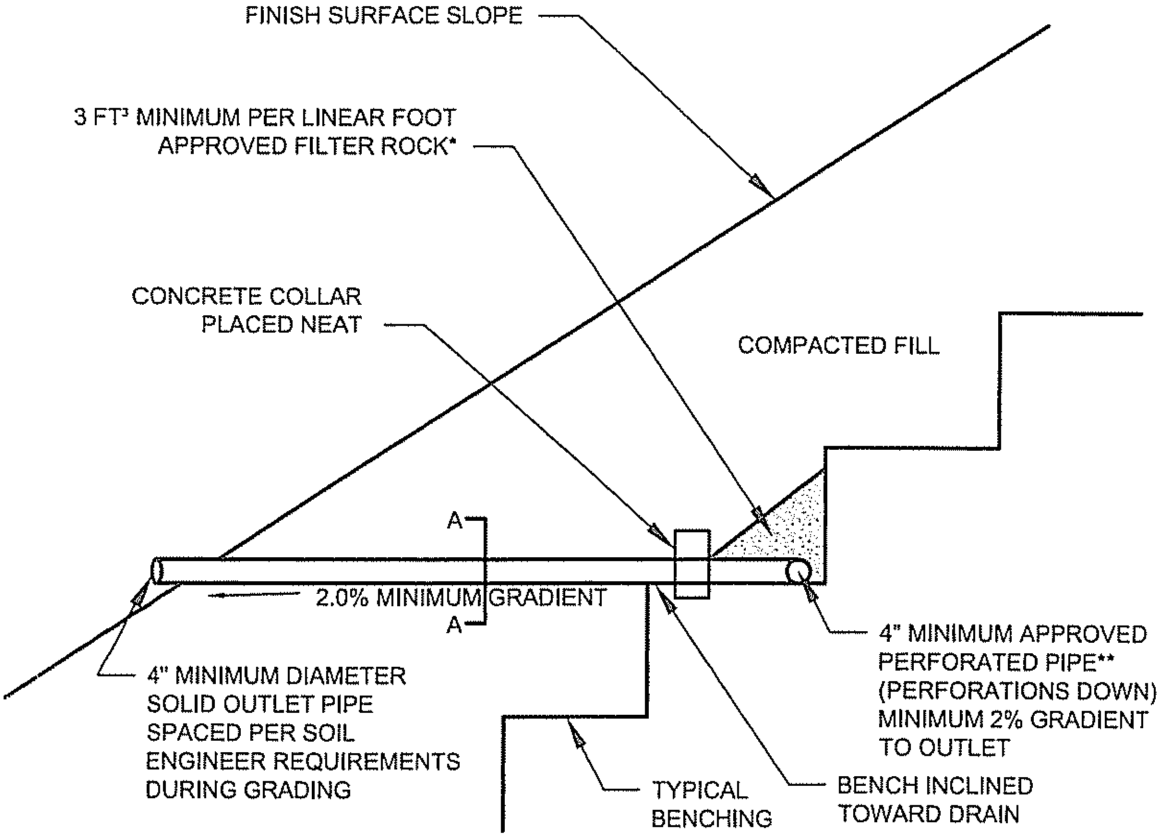


DAYLIGHT SHEAR KEY DETAIL

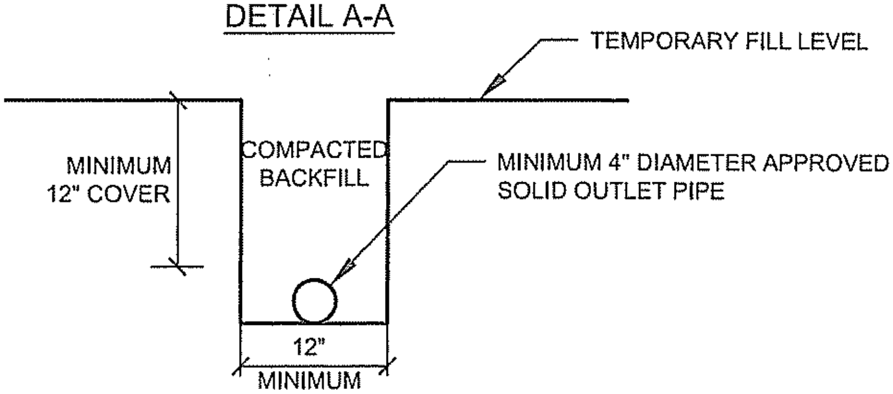


NOT TO SCALE

TYPICAL SHEAR KEY DETAIL



DETAIL A-A



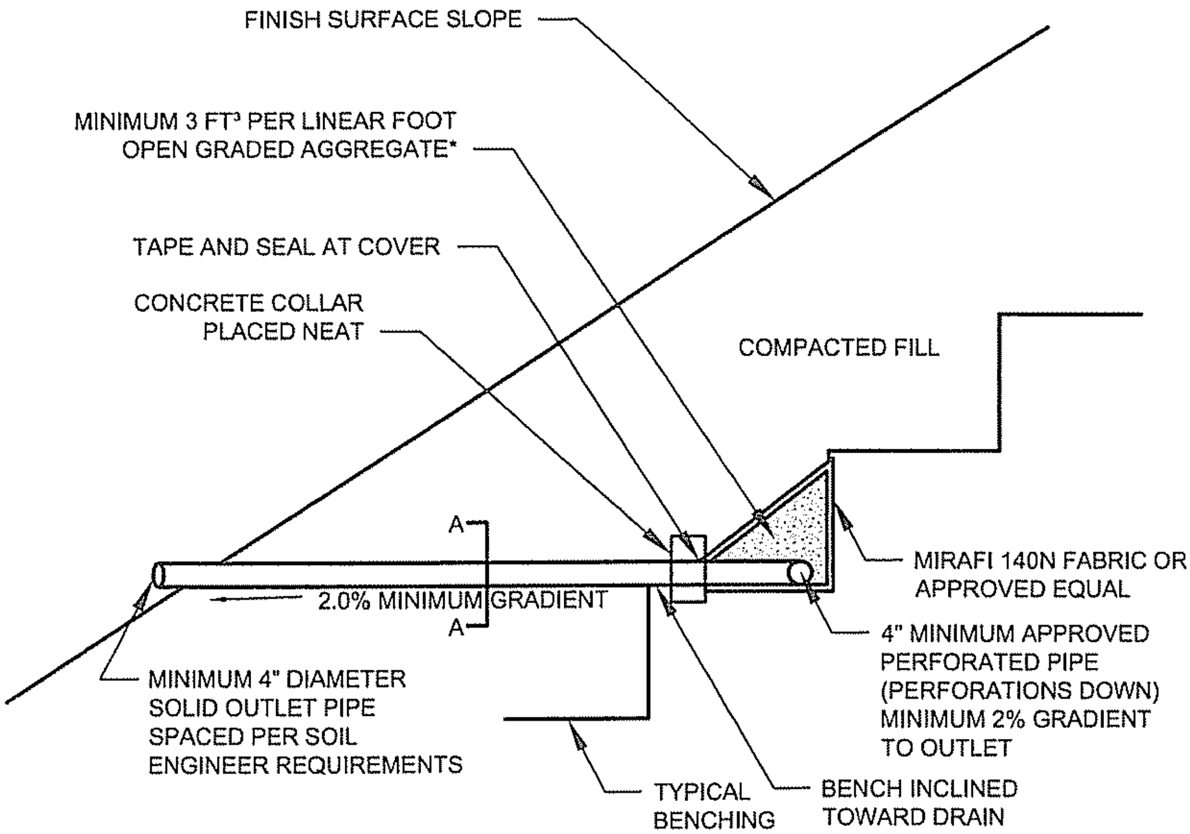
**APPROVED PIPE TYPE:
SCHEDULE 40 POLYVINYL CHLORIDE
(P.V.C.) OR APPROVED EQUAL.
MINIMUM CRUSH STRENGTH 1000 PSI

*FILTER ROCK TO MEET FOLLOWING
SPECIFICATIONS OR APPROVED EQUAL:

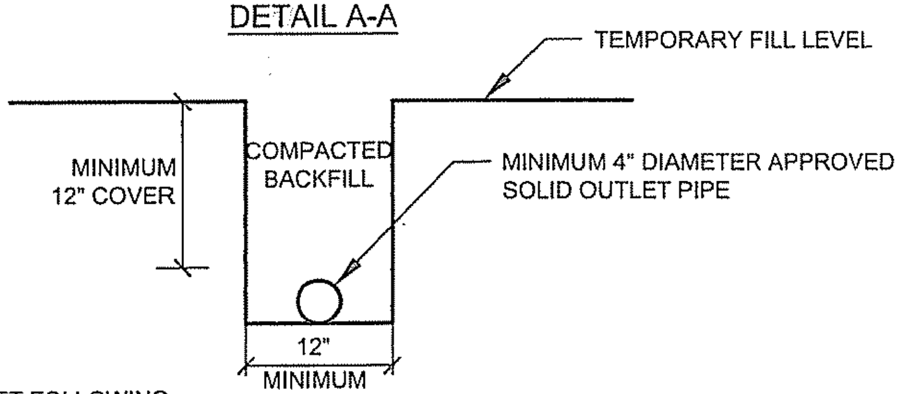
SIEVE SIZE	PERCENTAGE PASSING
1"	100
¾"	90-100
⅜"	40-100
NO. 4	25-40
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

NOT TO SCALE

TYPICAL BACKDRAIN DETAIL



DETAIL A-A

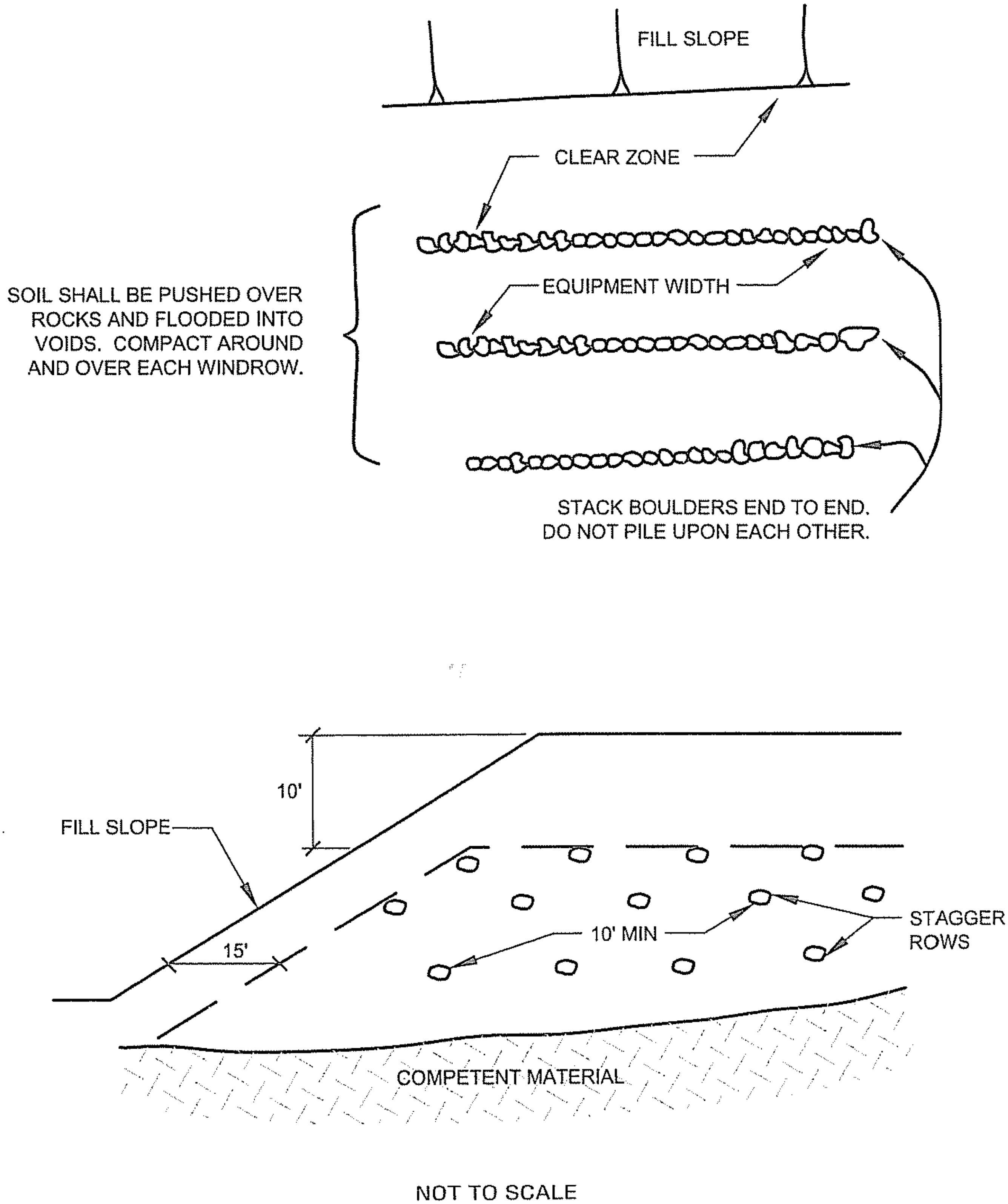


*NOTE: AGGREGATE TO MEET FOLLOWING SPECIFICATIONS OR APPROVED EQUAL:

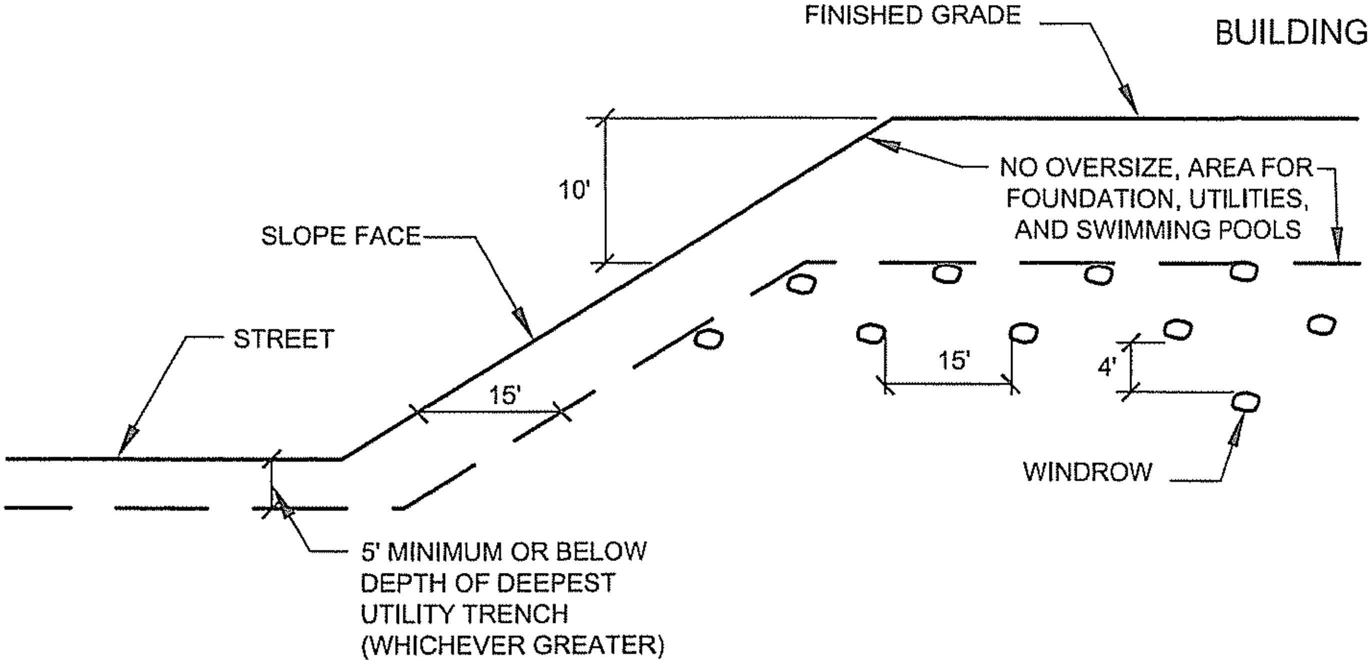
SIEVE SIZE	PERCENTAGE PASSING
1½"	100
1"	5-40
¾"	0-17
⅜"	0-7
NO. 200	0-3

NOT TO SCALE

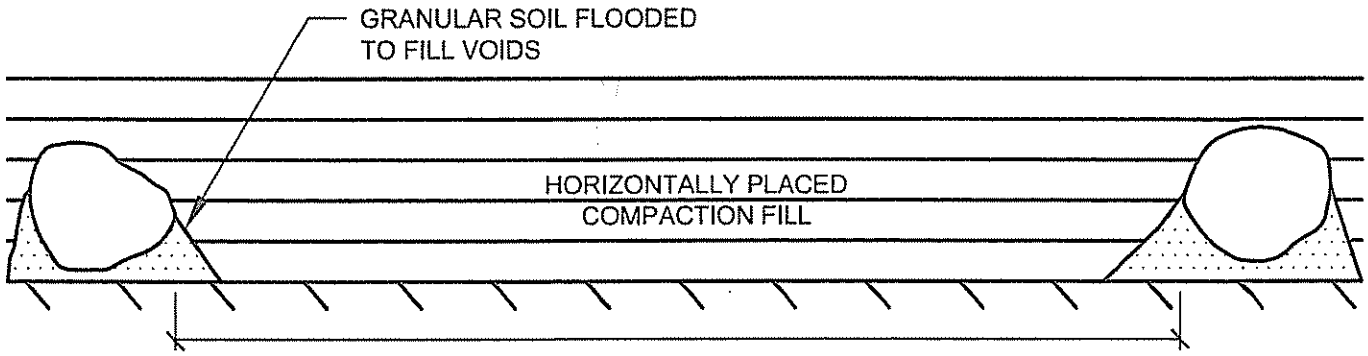
BACKDRAIN DETAIL (GEOFRABIC)



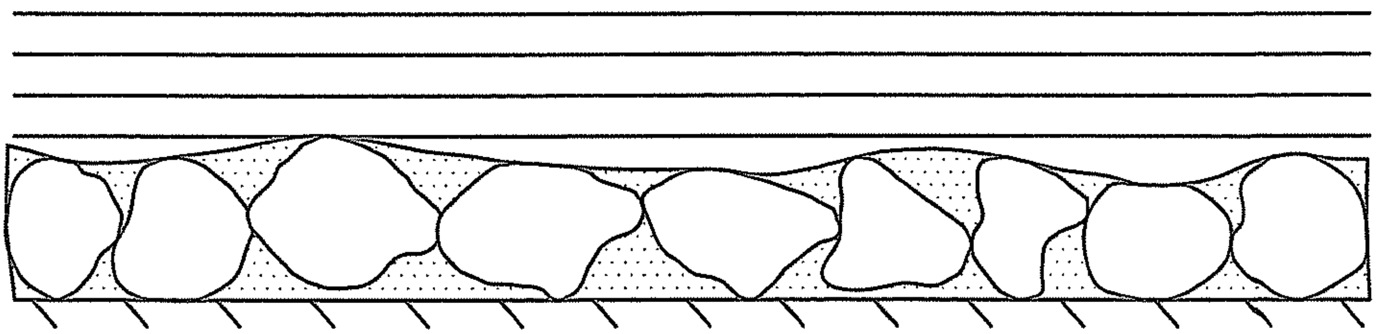
ROCK DISPOSAL DETAIL



TYPICAL WINDROW DETAIL (EDGE VIEW)



PROFILE VIEW

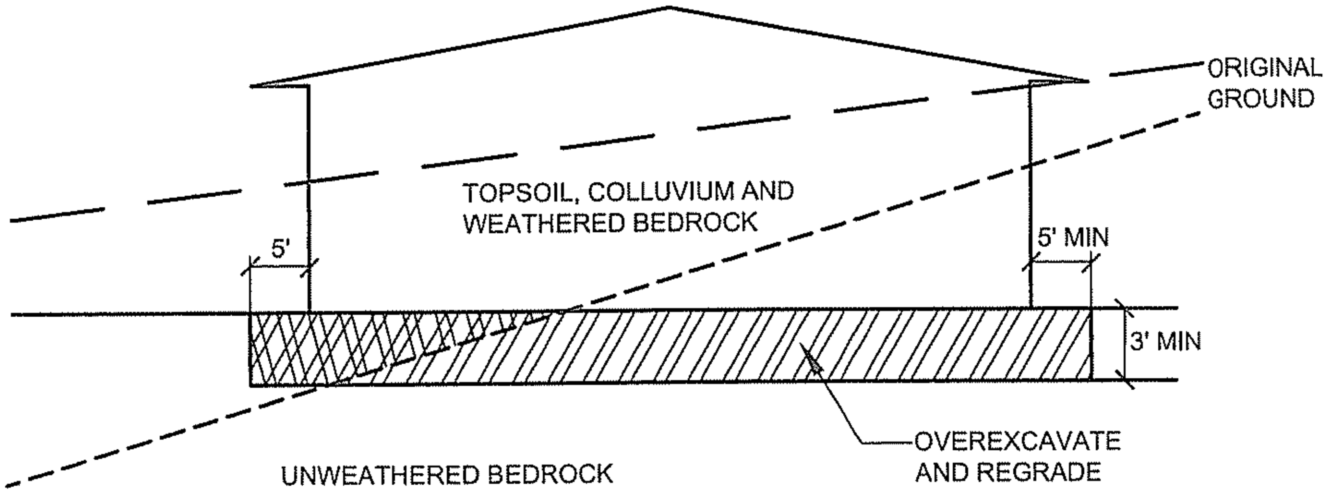


NOT TO SCALE

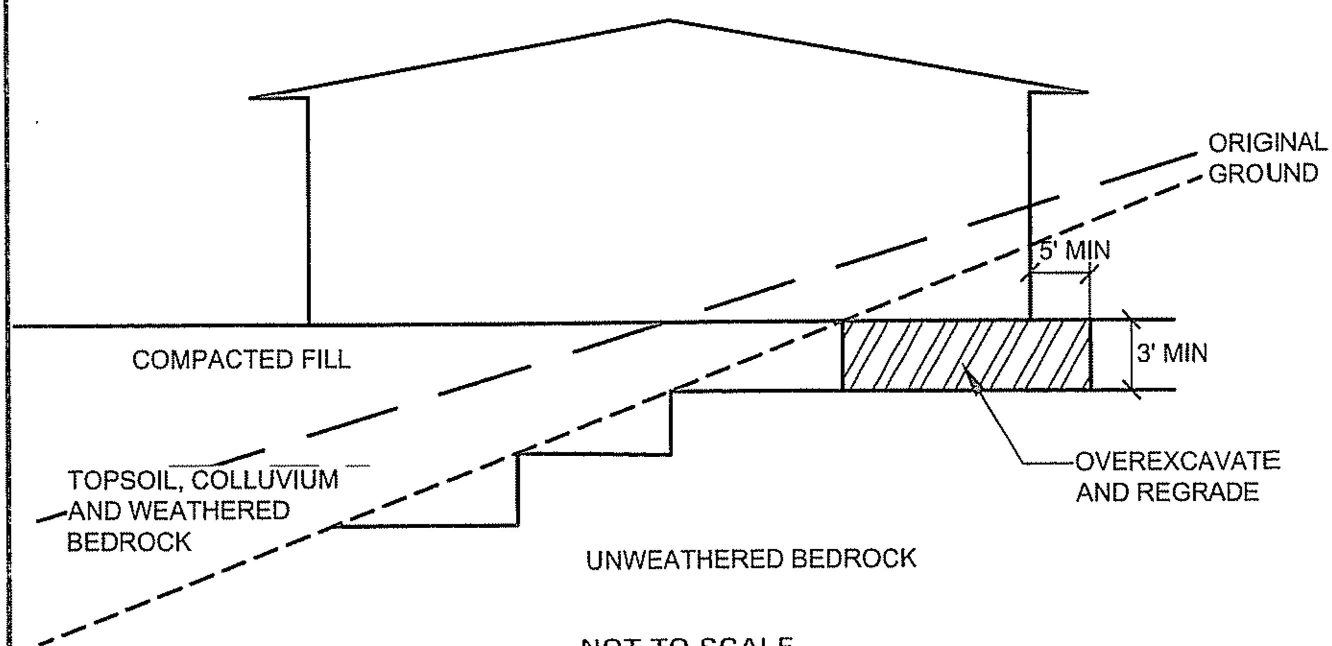
ROCK DISPOSAL DETAIL

GENERAL GRADING RECOMMENDATIONS

CUT LOT



CUT/FILL LOT (TRANSITION)



NOT TO SCALE

TRANSITION LOT DETAIL

APPENDIX E

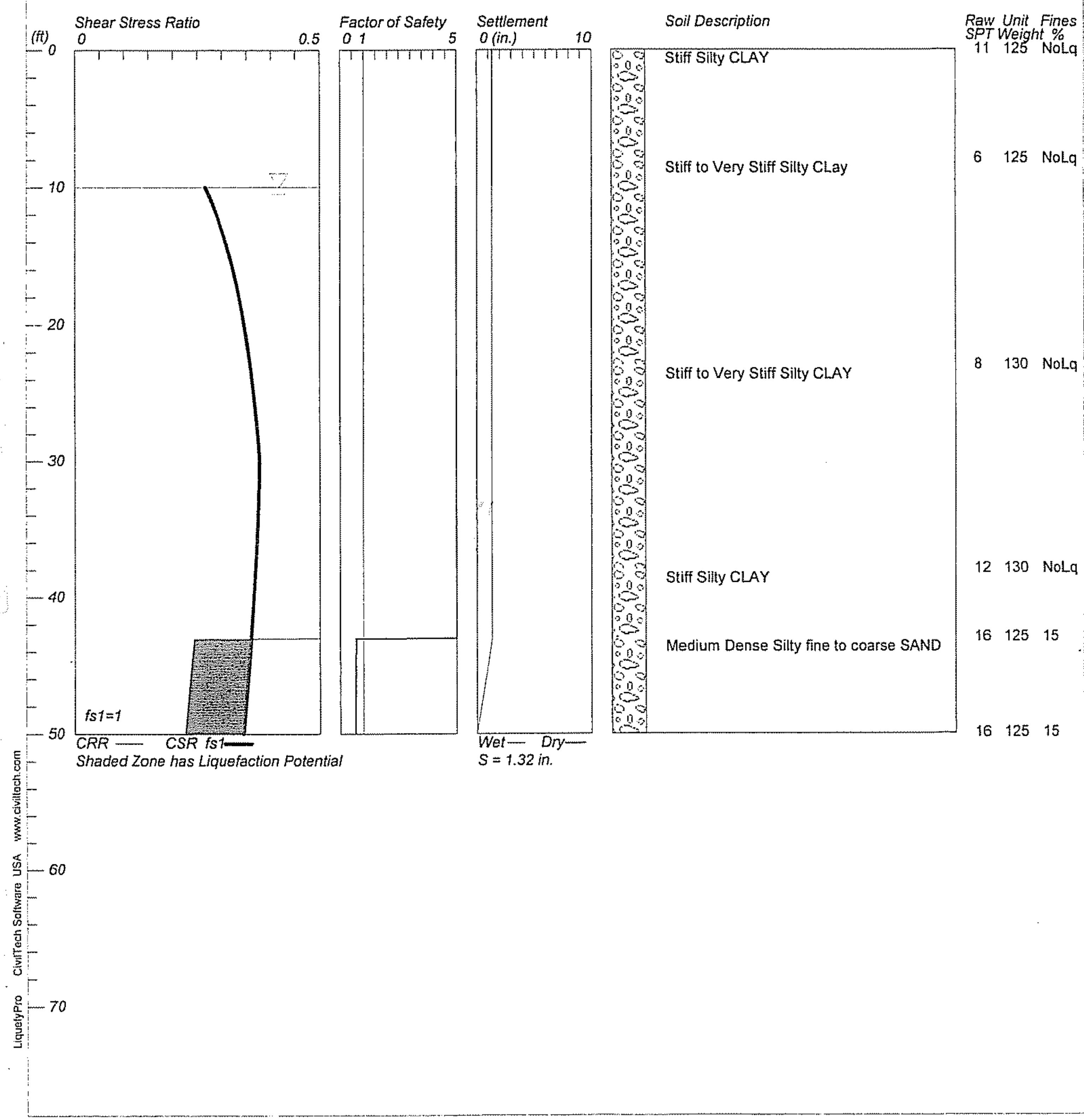
LIQUEFACTION ANALYSIS RESULTS

LIQUEFACTION ANALYSIS

Kaiser property

Hole No.=B-1   Water Depth=10 ft

Magnitude=7
Acceleration=0.42g



LiquefyPro

****

LIQUEFACTION ANALYSIS CALCULATION SHEET

****

Licensed to , 7/5/2007 10:43:55 AM

Input File Name: UNTITLED
Title: Kaiser property
Subtitle: Proj No. 20-1926

Surface Elev.=
Hole No.=B-1
Depth of Hole= 50.0 ft
Water Table during Earthquake= 10.0 ft
Water Table during In-Situ Testing= 10.0 ft
Max. Acceleration= 0.42 g
Earthquake Magnitude= 7.0

Input Data:

Surface Elev.=
Hole No.=B-1
Depth of Hole=50.0 ft
Water Table during Earthquake= 10.0 ft
Water Table during In-Situ Testing= 10.0 ft
Max. Acceleration=0.42 g
Earthquake Magnitude=7.0

Earthquake Magnitude=7.0
2. Settlement Analysis Method: Tokimatsu / Seed
3. Fines Correction for Liquefaction: Idriss/Seed (SPT only)
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.3
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=1)
10. Use Curve Smoothing: Yes*
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.0	11.0	125.0	NoLiq
8.0	6.0	125.0	NoLiq
23.0	8.0	130.0	NoLiq
38.0	12.0	130.0	NoLiq
43.0	16.0	125.0	15.0
50.0	16.0	125.0	15.0

Output Results:

Settlement of saturated sands=1.32 in.
Settlement of dry sands=0.00 in.

LiquefyPro

Total settlement of saturated and dry sands=1.32 in.
Differential Settlement=0.661 to 0.873 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	2.00	0.27	5.00	1.32	0.00	1.32
0.05	2.00	0.27	5.00	1.32	0.00	1.32
0.10	2.00	0.27	5.00	1.32	0.00	1.32
0.15	2.00	0.27	5.00	1.32	0.00	1.32
0.20	2.00	0.27	5.00	1.32	0.00	1.32
0.25	2.00	0.27	5.00	1.32	0.00	1.32
0.30	2.00	0.27	5.00	1.32	0.00	1.32
0.35	2.00	0.27	5.00	1.32	0.00	1.32
0.40	2.00	0.27	5.00	1.32	0.00	1.32
0.45	2.00	0.27	5.00	1.32	0.00	1.32
0.50	2.00	0.27	5.00	1.32	0.00	1.32
0.55	2.00	0.27	5.00	1.32	0.00	1.32
0.60	2.00	0.27	5.00	1.32	0.00	1.32
0.65	2.00	0.27	5.00	1.32	0.00	1.32
0.70	2.00	0.27	5.00	1.32	0.00	1.32
0.75	2.00	0.27	5.00	1.32	0.00	1.32
0.80	2.00	0.27	5.00	1.32	0.00	1.32
0.85	2.00	0.27	5.00	1.32	0.00	1.32
0.90	2.00	0.27	5.00	1.32	0.00	1.32
0.95	2.00	0.27	5.00	1.32	0.00	1.32
1.00	2.00	0.27	5.00	1.32	0.00	1.32
1.05	2.00	0.27	5.00	1.32	0.00	1.32
1.10	2.00	0.27	5.00	1.32	0.00	1.32
1.15	2.00	0.27	5.00	1.32	0.00	1.32
1.20	2.00	0.27	5.00	1.32	0.00	1.32
1.25	2.00	0.27	5.00	1.32	0.00	1.32
1.30	2.00	0.27	5.00	1.32	0.00	1.32
1.35	2.00	0.27	5.00	1.32	0.00	1.32
1.40	2.00	0.27	5.00	1.32	0.00	1.32
1.45	2.00	0.27	5.00	1.32	0.00	1.32
1.50	2.00	0.27	5.00	1.32	0.00	1.32
1.55	2.00	0.27	5.00	1.32	0.00	1.32
1.60	2.00	0.27	5.00	1.32	0.00	1.32
1.65	2.00	0.27	5.00	1.32	0.00	1.32
1.70	2.00	0.27	5.00	1.32	0.00	1.32
1.75	2.00	0.27	5.00	1.32	0.00	1.32
1.80	2.00	0.27	5.00	1.32	0.00	1.32
1.85	2.00	0.27	5.00	1.32	0.00	1.32
1.90	2.00	0.27	5.00	1.32	0.00	1.32
1.95	2.00	0.27	5.00	1.32	0.00	1.32
2.00	2.00	0.27	5.00	1.32	0.00	1.32
2.05	2.00	0.27	5.00	1.32	0.00	1.32
2.10	2.00	0.27	5.00	1.32	0.00	1.32
2.15	2.00	0.27	5.00	1.32	0.00	1.32
2.20	2.00	0.27	5.00	1.32	0.00	1.32
2.25	2.00	0.27	5.00	1.32	0.00	1.32
2.30	2.00	0.27	5.00	1.32	0.00	1.32
2.35	2.00	0.27	5.00	1.32	0.00	1.32
2.40	2.00	0.27	5.00	1.32	0.00	1.32
2.45	2.00	0.27	5.00	1.32	0.00	1.32
2.50	2.00	0.27	5.00	1.32	0.00	1.32
2.55	2.00	0.27	5.00	1.32	0.00	1.32
2.60	2.00	0.27	5.00	1.32	0.00	1.32
2.65	2.00	0.27	5.00	1.32	0.00	1.32
2.70	2.00	0.27	5.00	1.32	0.00	1.32
2.75	2.00	0.27	5.00	1.32	0.00	1.32
2.80	2.00	0.27	5.00	1.32	0.00	1.32

2.85	2.00	0.27	5.00	1.32	0.00	1.32
2.90	2.00	0.27	5.00	1.32	0.00	1.32
2.95	2.00	0.27	5.00	1.32	0.00	1.32
3.00	2.00	0.27	5.00	1.32	0.00	1.32
3.05	2.00	0.27	5.00	1.32	0.00	1.32
3.10	2.00	0.27	5.00	1.32	0.00	1.32
3.15	2.00	0.27	5.00	1.32	0.00	1.32
3.20	2.00	0.27	5.00	1.32	0.00	1.32
3.25	2.00	0.27	5.00	1.32	0.00	1.32
3.30	2.00	0.27	5.00	1.32	0.00	1.32
3.35	2.00	0.27	5.00	1.32	0.00	1.32
3.40	2.00	0.27	5.00	1.32	0.00	1.32
3.45	2.00	0.27	5.00	1.32	0.00	1.32
3.50	2.00	0.27	5.00	1.32	0.00	1.32
3.55	2.00	0.27	5.00	1.32	0.00	1.32
3.60	2.00	0.27	5.00	1.32	0.00	1.32
3.65	2.00	0.27	5.00	1.32	0.00	1.32
3.70	2.00	0.27	5.00	1.32	0.00	1.32
3.75	2.00	0.27	5.00	1.32	0.00	1.32
3.80	2.00	0.27	5.00	1.32	0.00	1.32
3.85	2.00	0.27	5.00	1.32	0.00	1.32
3.90	2.00	0.27	5.00	1.32	0.00	1.32
3.95	2.00	0.27	5.00	1.32	0.00	1.32
4.00	2.00	0.27	5.00	1.32	0.00	1.32
4.05	2.00	0.27	5.00	1.32	0.00	1.32
4.10	2.00	0.27	5.00	1.32	0.00	1.32
4.15	2.00	0.27	5.00	1.32	0.00	1.32
4.20	2.00	0.27	5.00	1.32	0.00	1.32
4.25	2.00	0.27	5.00	1.32	0.00	1.32
4.30	2.00	0.27	5.00	1.32	0.00	1.32
4.35	2.00	0.27	5.00	1.32	0.00	1.32
4.40	2.00	0.27	5.00	1.32	0.00	1.32
4.45	2.00	0.27	5.00	1.32	0.00	1.32
4.50	2.00	0.27	5.00	1.32	0.00	1.32
4.55	2.00	0.27	5.00	1.32	0.00	1.32
4.60	2.00	0.27	5.00	1.32	0.00	1.32
4.65	2.00	0.27	5.00	1.32	0.00	1.32
4.70	2.00	0.27	5.00	1.32	0.00	1.32
4.75	2.00	0.27	5.00	1.32	0.00	1.32
4.80	2.00	0.27	5.00	1.32	0.00	1.32
4.85	2.00	0.27	5.00	1.32	0.00	1.32
4.90	2.00	0.27	5.00	1.32	0.00	1.32
4.95	2.00	0.27	5.00	1.32	0.00	1.32
5.00	2.00	0.27	5.00	1.32	0.00	1.32
5.05	2.00	0.27	5.00	1.32	0.00	1.32
5.10	2.00	0.27	5.00	1.32	0.00	1.32
5.15	2.00	0.27	5.00	1.32	0.00	1.32
5.20	2.00	0.27	5.00	1.32	0.00	1.32
5.25	2.00	0.27	5.00	1.32	0.00	1.32
5.30	2.00	0.27	5.00	1.32	0.00	1.32
5.35	2.00	0.27	5.00	1.32	0.00	1.32
5.40	2.00	0.27	5.00	1.32	0.00	1.32
5.45	2.00	0.27	5.00	1.32	0.00	1.32
5.50	2.00	0.27	5.00	1.32	0.00	1.32
5.55	2.00	0.27	5.00	1.32	0.00	1.32
5.60	2.00	0.27	5.00	1.32	0.00	1.32
5.65	2.00	0.27	5.00	1.32	0.00	1.32
5.70	2.00	0.27	5.00	1.32	0.00	1.32
5.75	2.00	0.27	5.00	1.32	0.00	1.32
5.80	2.00	0.27	5.00	1.32	0.00	1.32
5.85	2.00	0.27	5.00	1.32	0.00	1.32
5.90	2.00	0.27	5.00	1.32	0.00	1.32
5.95	2.00	0.27	5.00	1.32	0.00	1.32

6.00	2.00	0.27	5.00	1.32	0.00	1.32
6.05	2.00	0.27	5.00	1.32	0.00	1.32
6.10	2.00	0.27	5.00	1.32	0.00	1.32
6.15	2.00	0.27	5.00	1.32	0.00	1.32
6.20	2.00	0.27	5.00	1.32	0.00	1.32
6.25	2.00	0.27	5.00	1.32	0.00	1.32
6.30	2.00	0.27	5.00	1.32	0.00	1.32
6.35	2.00	0.27	5.00	1.32	0.00	1.32
6.40	2.00	0.27	5.00	1.32	0.00	1.32
6.45	2.00	0.27	5.00	1.32	0.00	1.32
6.50	2.00	0.27	5.00	1.32	0.00	1.32
6.55	2.00	0.27	5.00	1.32	0.00	1.32
6.60	2.00	0.27	5.00	1.32	0.00	1.32
6.65	2.00	0.27	5.00	1.32	0.00	1.32
6.70	2.00	0.27	5.00	1.32	0.00	1.32
6.75	2.00	0.27	5.00	1.32	0.00	1.32
6.80	2.00	0.27	5.00	1.32	0.00	1.32
6.85	2.00	0.27	5.00	1.32	0.00	1.32
6.90	2.00	0.27	5.00	1.32	0.00	1.32
6.95	2.00	0.27	5.00	1.32	0.00	1.32
7.00	2.00	0.27	5.00	1.32	0.00	1.32
7.05	2.00	0.27	5.00	1.32	0.00	1.32
7.10	2.00	0.27	5.00	1.32	0.00	1.32
7.15	2.00	0.27	5.00	1.32	0.00	1.32
7.20	2.00	0.27	5.00	1.32	0.00	1.32
7.25	2.00	0.27	5.00	1.32	0.00	1.32
7.30	2.00	0.27	5.00	1.32	0.00	1.32
7.35	2.00	0.27	5.00	1.32	0.00	1.32
7.40	2.00	0.27	5.00	1.32	0.00	1.32
7.45	2.00	0.27	5.00	1.32	0.00	1.32
7.50	2.00	0.27	5.00	1.32	0.00	1.32
7.55	2.00	0.27	5.00	1.32	0.00	1.32
7.60	2.00	0.27	5.00	1.32	0.00	1.32
7.65	2.00	0.27	5.00	1.32	0.00	1.32
7.70	2.00	0.27	5.00	1.32	0.00	1.32
7.75	2.00	0.27	5.00	1.32	0.00	1.32
7.80	2.00	0.27	5.00	1.32	0.00	1.32
7.85	2.00	0.27	5.00	1.32	0.00	1.32
7.90	2.00	0.27	5.00	1.32	0.00	1.32
7.95	2.00	0.27	5.00	1.32	0.00	1.32
8.00	2.00	0.27	5.00	1.32	0.00	1.32
8.05	2.00	0.27	5.00	1.32	0.00	1.32
8.10	2.00	0.27	5.00	1.32	0.00	1.32
8.15	2.00	0.27	5.00	1.32	0.00	1.32
8.20	2.00	0.27	5.00	1.32	0.00	1.32
8.25	2.00	0.27	5.00	1.32	0.00	1.32
8.30	2.00	0.27	5.00	1.32	0.00	1.32
8.35	2.00	0.27	5.00	1.32	0.00	1.32
8.40	2.00	0.27	5.00	1.32	0.00	1.32
8.45	2.00	0.27	5.00	1.32	0.00	1.32
8.50	2.00	0.27	5.00	1.32	0.00	1.32
8.55	2.00	0.27	5.00	1.32	0.00	1.32
8.60	2.00	0.27	5.00	1.32	0.00	1.32
8.65	2.00	0.27	5.00	1.32	0.00	1.32
8.70	2.00	0.27	5.00	1.32	0.00	1.32
8.75	2.00	0.27	5.00	1.32	0.00	1.32
8.80	2.00	0.27	5.00	1.32	0.00	1.32
8.85	2.00	0.27	5.00	1.32	0.00	1.32
8.90	2.00	0.27	5.00	1.32	0.00	1.32
8.95	2.00	0.27	5.00	1.32	0.00	1.32
9.00	2.00	0.27	5.00	1.32	0.00	1.32
9.05	2.00	0.27	5.00	1.32	0.00	1.32
9.10	2.00	0.27	5.00	1.32	0.00	1.32

9.15	2.00	0.27	5.00	1.32	0.00	1.32
9.20	2.00	0.27	5.00	1.32	0.00	1.32
9.25	2.00	0.27	5.00	1.32	0.00	1.32
9.30	2.00	0.27	5.00	1.32	0.00	1.32
9.35	2.00	0.27	5.00	1.32	0.00	1.32
9.40	2.00	0.27	5.00	1.32	0.00	1.32
9.45	2.00	0.27	5.00	1.32	0.00	1.32
9.50	2.00	0.27	5.00	1.32	0.00	1.32
9.55	2.00	0.27	5.00	1.32	0.00	1.32
9.60	2.00	0.27	5.00	1.32	0.00	1.32
9.65	2.00	0.27	5.00	1.32	0.00	1.32
9.70	2.00	0.27	5.00	1.32	0.00	1.32
9.75	2.00	0.27	5.00	1.32	0.00	1.32
9.80	2.00	0.27	5.00	1.32	0.00	1.32
9.85	2.00	0.27	5.00	1.32	0.00	1.32
9.90	2.00	0.27	5.00	1.32	0.00	1.32
9.95	2.00	0.27	5.00	1.32	0.00	1.32
10.00	2.00	0.27	5.00	1.32	0.00	1.32
10.05	2.00	0.27	5.00	1.32	0.00	1.32
10.10	2.00	0.27	5.00	1.32	0.00	1.32
10.15	2.00	0.27	5.00	1.32	0.00	1.32
10.20	2.00	0.27	5.00	1.32	0.00	1.32
10.25	2.00	0.27	5.00	1.32	0.00	1.32
10.30	2.00	0.27	5.00	1.32	0.00	1.32
10.35	2.00	0.27	5.00	1.32	0.00	1.32
10.40	2.00	0.27	5.00	1.32	0.00	1.32
10.45	2.00	0.27	5.00	1.32	0.00	1.32
10.50	2.00	0.27	5.00	1.32	0.00	1.32
10.55	2.00	0.27	5.00	1.32	0.00	1.32
10.60	2.00	0.27	5.00	1.32	0.00	1.32
10.65	2.00	0.27	5.00	1.32	0.00	1.32
10.70	2.00	0.28	5.00	1.32	0.00	1.32
10.75	2.00	0.28	5.00	1.32	0.00	1.32
10.80	2.00	0.28	5.00	1.32	0.00	1.32
10.85	2.00	0.28	5.00	1.32	0.00	1.32
10.90	2.00	0.28	5.00	1.32	0.00	1.32
10.95	2.00	0.28	5.00	1.32	0.00	1.32
11.00	2.00	0.28	5.00	1.32	0.00	1.32
11.05	2.00	0.28	5.00	1.32	0.00	1.32
11.10	2.00	0.28	5.00	1.32	0.00	1.32
11.15	2.00	0.28	5.00	1.32	0.00	1.32
11.20	2.00	0.28	5.00	1.32	0.00	1.32
11.25	2.00	0.28	5.00	1.32	0.00	1.32
11.30	2.00	0.28	5.00	1.32	0.00	1.32
11.35	2.00	0.28	5.00	1.32	0.00	1.32
11.40	2.00	0.28	5.00	1.32	0.00	1.32
11.45	2.00	0.28	5.00	1.32	0.00	1.32
11.50	2.00	0.28	5.00	1.32	0.00	1.32
11.55	2.00	0.28	5.00	1.32	0.00	1.32
11.60	2.00	0.29	5.00	1.32	0.00	1.32
11.65	2.00	0.29	5.00	1.32	0.00	1.32
11.70	2.00	0.29	5.00	1.32	0.00	1.32
11.75	2.00	0.29	5.00	1.32	0.00	1.32
11.80	2.00	0.29	5.00	1.32	0.00	1.32
11.85	2.00	0.29	5.00	1.32	0.00	1.32
11.90	2.00	0.29	5.00	1.32	0.00	1.32
11.95	2.00	0.29	5.00	1.32	0.00	1.32
12.00	2.00	0.29	5.00	1.32	0.00	1.32
12.05	2.00	0.29	5.00	1.32	0.00	1.32
12.10	2.00	0.29	5.00	1.32	0.00	1.32
12.15	2.00	0.29	5.00	1.32	0.00	1.32
12.20	2.00	0.29	5.00	1.32	0.00	1.32
12.25	2.00	0.29	5.00	1.32	0.00	1.32

12.30	2.00	0.29	5.00	1.32	0.00	1.32
12.35	2.00	0.29	5.00	1.32	0.00	1.32
12.40	2.00	0.29	5.00	1.32	0.00	1.32
12.45	2.00	0.29	5.00	1.32	0.00	1.32
12.50	2.00	0.29	5.00	1.32	0.00	1.32
12.55	2.00	0.29	5.00	1.32	0.00	1.32
12.60	2.00	0.30	5.00	1.32	0.00	1.32
12.65	2.00	0.30	5.00	1.32	0.00	1.32
12.70	2.00	0.30	5.00	1.32	0.00	1.32
12.75	2.00	0.30	5.00	1.32	0.00	1.32
12.80	2.00	0.30	5.00	1.32	0.00	1.32
12.85	2.00	0.30	5.00	1.32	0.00	1.32
12.90	2.00	0.30	5.00	1.32	0.00	1.32
12.95	2.00	0.30	5.00	1.32	0.00	1.32
13.00	2.00	0.30	5.00	1.32	0.00	1.32
13.05	2.00	0.30	5.00	1.32	0.00	1.32
13.10	2.00	0.30	5.00	1.32	0.00	1.32
13.15	2.00	0.30	5.00	1.32	0.00	1.32
13.20	2.00	0.30	5.00	1.32	0.00	1.32
13.25	2.00	0.30	5.00	1.32	0.00	1.32
13.30	2.00	0.30	5.00	1.32	0.00	1.32
13.35	2.00	0.30	5.00	1.32	0.00	1.32
13.40	2.00	0.30	5.00	1.32	0.00	1.32
13.45	2.00	0.30	5.00	1.32	0.00	1.32
13.50	2.00	0.30	5.00	1.32	0.00	1.32
13.55	2.00	0.30	5.00	1.32	0.00	1.32
13.60	2.00	0.30	5.00	1.32	0.00	1.32
13.65	2.00	0.30	5.00	1.32	0.00	1.32
13.70	2.00	0.31	5.00	1.32	0.00	1.32
13.75	2.00	0.31	5.00	1.32	0.00	1.32
13.80	2.00	0.31	5.00	1.32	0.00	1.32
13.85	2.00	0.31	5.00	1.32	0.00	1.32
13.90	2.00	0.31	5.00	1.32	0.00	1.32
13.95	2.00	0.31	5.00	1.32	0.00	1.32
14.00	2.00	0.31	5.00	1.32	0.00	1.32
14.05	2.00	0.31	5.00	1.32	0.00	1.32
14.10	2.00	0.31	5.00	1.32	0.00	1.32
14.15	2.00	0.31	5.00	1.32	0.00	1.32
14.20	2.00	0.31	5.00	1.32	0.00	1.32
14.25	2.00	0.31	5.00	1.32	0.00	1.32
14.30	2.00	0.31	5.00	1.32	0.00	1.32
14.35	2.00	0.31	5.00	1.32	0.00	1.32
14.40	2.00	0.31	5.00	1.32	0.00	1.32
14.45	2.00	0.31	5.00	1.32	0.00	1.32
14.50	2.00	0.31	5.00	1.32	0.00	1.32
14.55	2.00	0.31	5.00	1.32	0.00	1.32
14.60	2.00	0.31	5.00	1.32	0.00	1.32
14.65	2.00	0.31	5.00	1.32	0.00	1.32
14.70	2.00	0.31	5.00	1.32	0.00	1.32
14.75	2.00	0.31	5.00	1.32	0.00	1.32
14.80	2.00	0.31	5.00	1.32	0.00	1.32
14.85	2.00	0.31	5.00	1.32	0.00	1.32
14.90	2.00	0.32	5.00	1.32	0.00	1.32
14.95	2.00	0.32	5.00	1.32	0.00	1.32
15.00	2.00	0.32	5.00	1.32	0.00	1.32
15.05	2.00	0.32	5.00	1.32	0.00	1.32
15.10	2.00	0.32	5.00	1.32	0.00	1.32
15.15	2.00	0.32	5.00	1.32	0.00	1.32
15.20	2.00	0.32	5.00	1.32	0.00	1.32
15.25	2.00	0.32	5.00	1.32	0.00	1.32
15.30	2.00	0.32	5.00	1.32	0.00	1.32
15.35	2.00	0.32	5.00	1.32	0.00	1.32
15.40	2.00	0.32	5.00	1.32	0.00	1.32

15.45	2.00	0.32	5.00	1.32	0.00	1.32
15.50	2.00	0.32	5.00	1.32	0.00	1.32
15.55	2.00	0.32	5.00	1.32	0.00	1.32
15.60	2.00	0.32	5.00	1.32	0.00	1.32
15.65	2.00	0.32	5.00	1.32	0.00	1.32
15.70	2.00	0.32	5.00	1.32	0.00	1.32
15.75	2.00	0.32	5.00	1.32	0.00	1.32
15.80	2.00	0.32	5.00	1.32	0.00	1.32
15.85	2.00	0.32	5.00	1.32	0.00	1.32
15.90	2.00	0.32	5.00	1.32	0.00	1.32
15.95	2.00	0.32	5.00	1.32	0.00	1.32
16.00	2.00	0.32	5.00	1.32	0.00	1.32
16.05	2.00	0.32	5.00	1.32	0.00	1.32
16.10	2.00	0.32	5.00	1.32	0.00	1.32
16.15	2.00	0.32	5.00	1.32	0.00	1.32
16.20	2.00	0.32	5.00	1.32	0.00	1.32
16.25	2.00	0.32	5.00	1.32	0.00	1.32
16.30	2.00	0.32	5.00	1.32	0.00	1.32
16.35	2.00	0.33	5.00	1.32	0.00	1.32
16.40	2.00	0.33	5.00	1.32	0.00	1.32
16.45	2.00	0.33	5.00	1.32	0.00	1.32
16.50	2.00	0.33	5.00	1.32	0.00	1.32
16.55	2.00	0.33	5.00	1.32	0.00	1.32
16.60	2.00	0.33	5.00	1.32	0.00	1.32
16.65	2.00	0.33	5.00	1.32	0.00	1.32
16.70	2.00	0.33	5.00	1.32	0.00	1.32
16.75	2.00	0.33	5.00	1.32	0.00	1.32
16.80	2.00	0.33	5.00	1.32	0.00	1.32
16.85	2.00	0.33	5.00	1.32	0.00	1.32
16.90	2.00	0.33	5.00	1.32	0.00	1.32
16.95	2.00	0.33	5.00	1.32	0.00	1.32
17.00	2.00	0.33	5.00	1.32	0.00	1.32
17.05	2.00	0.33	5.00	1.32	0.00	1.32
17.10	2.00	0.33	5.00	1.32	0.00	1.32
17.15	2.00	0.33	5.00	1.32	0.00	1.32
17.20	2.00	0.33	5.00	1.32	0.00	1.32
17.25	2.00	0.33	5.00	1.32	0.00	1.32
17.30	2.00	0.33	5.00	1.32	0.00	1.32
17.35	2.00	0.33	5.00	1.32	0.00	1.32
17.40	2.00	0.33	5.00	1.32	0.00	1.32
17.45	2.00	0.33	5.00	1.32	0.00	1.32
17.50	2.00	0.33	5.00	1.32	0.00	1.32
17.55	2.00	0.33	5.00	1.32	0.00	1.32
17.60	2.00	0.33	5.00	1.32	0.00	1.32
17.65	2.00	0.33	5.00	1.32	0.00	1.32
17.70	2.00	0.33	5.00	1.32	0.00	1.32
17.75	2.00	0.33	5.00	1.32	0.00	1.32
17.80	2.00	0.33	5.00	1.32	0.00	1.32
17.85	2.00	0.33	5.00	1.32	0.00	1.32
17.90	2.00	0.33	5.00	1.32	0.00	1.32
17.95	2.00	0.34	5.00	1.32	0.00	1.32
18.00	2.00	0.34	5.00	1.32	0.00	1.32
18.05	2.00	0.34	5.00	1.32	0.00	1.32
18.10	2.00	0.34	5.00	1.32	0.00	1.32
18.15	2.00	0.34	5.00	1.32	0.00	1.32
18.20	2.00	0.34	5.00	1.32	0.00	1.32
18.25	2.00	0.34	5.00	1.32	0.00	1.32
18.30	2.00	0.34	5.00	1.32	0.00	1.32
18.35	2.00	0.34	5.00	1.32	0.00	1.32
18.40	2.00	0.34	5.00	1.32	0.00	1.32
18.45	2.00	0.34	5.00	1.32	0.00	1.32
18.50	2.00	0.34	5.00	1.32	0.00	1.32
18.55	2.00	0.34	5.00	1.32	0.00	1.32

18.60	2.00	0.34	5.00	1.32	0.00	1.32
18.65	2.00	0.34	5.00	1.32	0.00	1.32
18.70	2.00	0.34	5.00	1.32	0.00	1.32
18.75	2.00	0.34	5.00	1.32	0.00	1.32
18.80	2.00	0.34	5.00	1.32	0.00	1.32
18.85	2.00	0.34	5.00	1.32	0.00	1.32
18.90	2.00	0.34	5.00	1.32	0.00	1.32
18.95	2.00	0.34	5.00	1.32	0.00	1.32
19.00	2.00	0.34	5.00	1.32	0.00	1.32
19.05	2.00	0.34	5.00	1.32	0.00	1.32
19.10	2.00	0.34	5.00	1.32	0.00	1.32
19.15	2.00	0.34	5.00	1.32	0.00	1.32
19.20	2.00	0.34	5.00	1.32	0.00	1.32
19.25	2.00	0.34	5.00	1.32	0.00	1.32
19.30	2.00	0.34	5.00	1.32	0.00	1.32
19.35	2.00	0.34	5.00	1.32	0.00	1.32
19.40	2.00	0.34	5.00	1.32	0.00	1.32
19.45	2.00	0.34	5.00	1.32	0.00	1.32
19.50	2.00	0.34	5.00	1.32	0.00	1.32
19.55	2.00	0.34	5.00	1.32	0.00	1.32
19.60	2.00	0.34	5.00	1.32	0.00	1.32
19.65	2.00	0.34	5.00	1.32	0.00	1.32
19.70	2.00	0.34	5.00	1.32	0.00	1.32
19.75	2.00	0.34	5.00	1.32	0.00	1.32
19.80	2.00	0.34	5.00	1.32	0.00	1.32
19.85	2.00	0.35	5.00	1.32	0.00	1.32
19.90	2.00	0.35	5.00	1.32	0.00	1.32
19.95	2.00	0.35	5.00	1.32	0.00	1.32
20.00	2.00	0.35	5.00	1.32	0.00	1.32
20.05	2.00	0.35	5.00	1.32	0.00	1.32
20.10	2.00	0.35	5.00	1.32	0.00	1.32
20.15	2.00	0.35	5.00	1.32	0.00	1.32
20.20	2.00	0.35	5.00	1.32	0.00	1.32
20.25	2.00	0.35	5.00	1.32	0.00	1.32
20.30	2.00	0.35	5.00	1.32	0.00	1.32
20.35	2.00	0.35	5.00	1.32	0.00	1.32
20.40	2.00	0.35	5.00	1.32	0.00	1.32
20.45	2.00	0.35	5.00	1.32	0.00	1.32
20.50	2.00	0.35	5.00	1.32	0.00	1.32
20.55	2.00	0.35	5.00	1.32	0.00	1.32
20.60	2.00	0.35	5.00	1.32	0.00	1.32
20.65	2.00	0.35	5.00	1.32	0.00	1.32
20.70	2.00	0.35	5.00	1.32	0.00	1.32
20.75	2.00	0.35	5.00	1.32	0.00	1.32
20.80	2.00	0.35	5.00	1.32	0.00	1.32
20.85	2.00	0.35	5.00	1.32	0.00	1.32
20.90	2.00	0.35	5.00	1.32	0.00	1.32
20.95	2.00	0.35	5.00	1.32	0.00	1.32
21.00	2.00	0.35	5.00	1.32	0.00	1.32
21.05	2.00	0.35	5.00	1.32	0.00	1.32
21.10	2.00	0.35	5.00	1.32	0.00	1.32
21.15	2.00	0.35	5.00	1.32	0.00	1.32
21.20	2.00	0.35	5.00	1.32	0.00	1.32
21.25	2.00	0.35	5.00	1.32	0.00	1.32
21.30	2.00	0.35	5.00	1.32	0.00	1.32
21.35	2.00	0.35	5.00	1.32	0.00	1.32
21.40	2.00	0.35	5.00	1.32	0.00	1.32
21.45	2.00	0.35	5.00	1.32	0.00	1.32
21.50	2.00	0.35	5.00	1.32	0.00	1.32
21.55	2.00	0.35	5.00	1.32	0.00	1.32
21.60	2.00	0.35	5.00	1.32	0.00	1.32
21.65	2.00	0.35	5.00	1.32	0.00	1.32
21.70	2.00	0.35	5.00	1.32	0.00	1.32

21.75	2.00	0.35	5.00	1.32	0.00	1.32
21.80	2.00	0.35	5.00	1.32	0.00	1.32
21.85	2.00	0.35	5.00	1.32	0.00	1.32
21.90	2.00	0.35	5.00	1.32	0.00	1.32
21.95	2.00	0.35	5.00	1.32	0.00	1.32
22.00	2.00	0.35	5.00	1.32	0.00	1.32
22.05	2.00	0.35	5.00	1.32	0.00	1.32
22.10	2.00	0.35	5.00	1.32	0.00	1.32
22.15	2.00	0.35	5.00	1.32	0.00	1.32
22.20	2.00	0.36	5.00	1.32	0.00	1.32
22.25	2.00	0.36	5.00	1.32	0.00	1.32
22.30	2.00	0.36	5.00	1.32	0.00	1.32
22.35	2.00	0.36	5.00	1.32	0.00	1.32
22.40	2.00	0.36	5.00	1.32	0.00	1.32
22.45	2.00	0.36	5.00	1.32	0.00	1.32
22.50	2.00	0.36	5.00	1.32	0.00	1.32
22.55	2.00	0.36	5.00	1.32	0.00	1.32
22.60	2.00	0.36	5.00	1.32	0.00	1.32
22.65	2.00	0.36	5.00	1.32	0.00	1.32
22.70	2.00	0.36	5.00	1.32	0.00	1.32
22.75	2.00	0.36	5.00	1.32	0.00	1.32
22.80	2.00	0.36	5.00	1.32	0.00	1.32
22.85	2.00	0.36	5.00	1.32	0.00	1.32
22.90	2.00	0.36	5.00	1.32	0.00	1.32
22.95	2.00	0.36	5.00	1.32	0.00	1.32
23.00	2.00	0.36	5.00	1.32	0.00	1.32
23.05	2.00	0.36	5.00	1.32	0.00	1.32
23.10	2.00	0.36	5.00	1.32	0.00	1.32
23.15	2.00	0.36	5.00	1.32	0.00	1.32
23.20	2.00	0.36	5.00	1.32	0.00	1.32
23.25	2.00	0.36	5.00	1.32	0.00	1.32
23.30	2.00	0.36	5.00	1.32	0.00	1.32
23.35	2.00	0.36	5.00	1.32	0.00	1.32
23.40	2.00	0.36	5.00	1.32	0.00	1.32
23.45	2.00	0.36	5.00	1.32	0.00	1.32
23.50	2.00	0.36	5.00	1.32	0.00	1.32
23.55	2.00	0.36	5.00	1.32	0.00	1.32
23.60	2.00	0.36	5.00	1.32	0.00	1.32
23.65	2.00	0.36	5.00	1.32	0.00	1.32
23.70	2.00	0.36	5.00	1.32	0.00	1.32
23.75	2.00	0.36	5.00	1.32	0.00	1.32
23.80	2.00	0.36	5.00	1.32	0.00	1.32
23.85	2.00	0.36	5.00	1.32	0.00	1.32
23.90	2.00	0.36	5.00	1.32	0.00	1.32
23.95	2.00	0.36	5.00	1.32	0.00	1.32
24.00	2.00	0.36	5.00	1.32	0.00	1.32
24.05	2.00	0.36	5.00	1.32	0.00	1.32
24.10	2.00	0.36	5.00	1.32	0.00	1.32
24.15	2.00	0.36	5.00	1.32	0.00	1.32
24.20	2.00	0.36	5.00	1.32	0.00	1.32
24.25	2.00	0.36	5.00	1.32	0.00	1.32
24.30	2.00	0.36	5.00	1.32	0.00	1.32
24.35	2.00	0.36	5.00	1.32	0.00	1.32
24.40	2.00	0.36	5.00	1.32	0.00	1.32
24.45	2.00	0.36	5.00	1.32	0.00	1.32
24.50	2.00	0.36	5.00	1.32	0.00	1.32
24.55	2.00	0.36	5.00	1.32	0.00	1.32
24.60	2.00	0.36	5.00	1.32	0.00	1.32
24.65	2.00	0.36	5.00	1.32	0.00	1.32
24.70	2.00	0.36	5.00	1.32	0.00	1.32
24.75	2.00	0.36	5.00	1.32	0.00	1.32
24.80	2.00	0.36	5.00	1.32	0.00	1.32
24.85	2.00	0.36	5.00	1.32	0.00	1.32

24.90	2.00	0.36	5.00	1.32	0.00	1.32
24.95	2.00	0.36	5.00	1.32	0.00	1.32
25.00	2.00	0.36	5.00	1.32	0.00	1.32
25.05	2.00	0.36	5.00	1.32	0.00	1.32
25.10	2.00	0.36	5.00	1.32	0.00	1.32
25.15	2.00	0.37	5.00	1.32	0.00	1.32
25.20	2.00	0.37	5.00	1.32	0.00	1.32
25.25	2.00	0.37	5.00	1.32	0.00	1.32
25.30	2.00	0.37	5.00	1.32	0.00	1.32
25.35	2.00	0.37	5.00	1.32	0.00	1.32
25.40	2.00	0.37	5.00	1.32	0.00	1.32
25.45	2.00	0.37	5.00	1.32	0.00	1.32
25.50	2.00	0.37	5.00	1.32	0.00	1.32
25.55	2.00	0.37	5.00	1.32	0.00	1.32
25.60	2.00	0.37	5.00	1.32	0.00	1.32
25.65	2.00	0.37	5.00	1.32	0.00	1.32
25.70	2.00	0.37	5.00	1.32	0.00	1.32
25.75	2.00	0.37	5.00	1.32	0.00	1.32
25.80	2.00	0.37	5.00	1.32	0.00	1.32
25.85	2.00	0.37	5.00	1.32	0.00	1.32
25.90	2.00	0.37	5.00	1.32	0.00	1.32
25.95	2.00	0.37	5.00	1.32	0.00	1.32
26.00	2.00	0.37	5.00	1.32	0.00	1.32
26.05	2.00	0.37	5.00	1.32	0.00	1.32
26.10	2.00	0.37	5.00	1.32	0.00	1.32
26.15	2.00	0.37	5.00	1.32	0.00	1.32
26.20	2.00	0.37	5.00	1.32	0.00	1.32
26.25	2.00	0.37	5.00	1.32	0.00	1.32
26.30	2.00	0.37	5.00	1.32	0.00	1.32
26.35	2.00	0.37	5.00	1.32	0.00	1.32
26.40	2.00	0.37	5.00	1.32	0.00	1.32
26.45	2.00	0.37	5.00	1.32	0.00	1.32
26.50	2.00	0.37	5.00	1.32	0.00	1.32
26.55	2.00	0.37	5.00	1.32	0.00	1.32
26.60	2.00	0.37	5.00	1.32	0.00	1.32
26.65	2.00	0.37	5.00	1.32	0.00	1.32
26.70	2.00	0.37	5.00	1.32	0.00	1.32
26.75	2.00	0.37	5.00	1.32	0.00	1.32
26.80	2.00	0.37	5.00	1.32	0.00	1.32
26.85	2.00	0.37	5.00	1.32	0.00	1.32
26.90	2.00	0.37	5.00	1.32	0.00	1.32
26.95	2.00	0.37	5.00	1.32	0.00	1.32
27.00	2.00	0.37	5.00	1.32	0.00	1.32
27.05	2.00	0.37	5.00	1.32	0.00	1.32
27.10	2.00	0.37	5.00	1.32	0.00	1.32
27.15	2.00	0.37	5.00	1.32	0.00	1.32
27.20	2.00	0.37	5.00	1.32	0.00	1.32
27.25	2.00	0.37	5.00	1.32	0.00	1.32
27.30	2.00	0.37	5.00	1.32	0.00	1.32
27.35	2.00	0.37	5.00	1.32	0.00	1.32
27.40	2.00	0.37	5.00	1.32	0.00	1.32
27.45	2.00	0.37	5.00	1.32	0.00	1.32
27.50	2.00	0.37	5.00	1.32	0.00	1.32
27.55	2.00	0.37	5.00	1.32	0.00	1.32
27.60	2.00	0.37	5.00	1.32	0.00	1.32
27.65	2.00	0.37	5.00	1.32	0.00	1.32
27.70	2.00	0.37	5.00	1.32	0.00	1.32
27.75	2.00	0.37	5.00	1.32	0.00	1.32
27.80	2.00	0.37	5.00	1.32	0.00	1.32
27.85	2.00	0.37	5.00	1.32	0.00	1.32
27.90	2.00	0.37	5.00	1.32	0.00	1.32
27.95	2.00	0.37	5.00	1.32	0.00	1.32
28.00	2.00	0.37	5.00	1.32	0.00	1.32

28.05	2.00	0.37	5.00	1.32	0.00	1.32
28.10	2.00	0.37	5.00	1.32	0.00	1.32
28.15	2.00	0.37	5.00	1.32	0.00	1.32
28.20	2.00	0.37	5.00	1.32	0.00	1.32
28.25	2.00	0.37	5.00	1.32	0.00	1.32
28.30	2.00	0.37	5.00	1.32	0.00	1.32
28.35	2.00	0.37	5.00	1.32	0.00	1.32
28.40	2.00	0.37	5.00	1.32	0.00	1.32
28.45	2.00	0.37	5.00	1.32	0.00	1.32
28.50	2.00	0.37	5.00	1.32	0.00	1.32
28.55	2.00	0.37	5.00	1.32	0.00	1.32
28.60	2.00	0.37	5.00	1.32	0.00	1.32
28.65	2.00	0.37	5.00	1.32	0.00	1.32
28.70	2.00	0.37	5.00	1.32	0.00	1.32
28.75	2.00	0.37	5.00	1.32	0.00	1.32
28.80	2.00	0.37	5.00	1.32	0.00	1.32
28.85	2.00	0.37	5.00	1.32	0.00	1.32
28.90	2.00	0.37	5.00	1.32	0.00	1.32
28.95	2.00	0.37	5.00	1.32	0.00	1.32
29.00	2.00	0.37	5.00	1.32	0.00	1.32
29.05	2.00	0.38	5.00	1.32	0.00	1.32
29.10	2.00	0.38	5.00	1.32	0.00	1.32
29.15	2.00	0.38	5.00	1.32	0.00	1.32
29.20	2.00	0.38	5.00	1.32	0.00	1.32
29.25	2.00	0.38	5.00	1.32	0.00	1.32
29.30	2.00	0.38	5.00	1.32	0.00	1.32
29.35	2.00	0.38	5.00	1.32	0.00	1.32
29.40	2.00	0.38	5.00	1.32	0.00	1.32
29.45	2.00	0.38	5.00	1.32	0.00	1.32
29.50	2.00	0.38	5.00	1.32	0.00	1.32
29.55	2.00	0.38	5.00	1.32	0.00	1.32
29.60	2.00	0.38	5.00	1.32	0.00	1.32
29.65	2.00	0.38	5.00	1.32	0.00	1.32
29.70	2.00	0.38	5.00	1.32	0.00	1.32
29.75	2.00	0.38	5.00	1.32	0.00	1.32
29.80	2.00	0.38	5.00	1.32	0.00	1.32
29.85	2.00	0.38	5.00	1.32	0.00	1.32
29.90	2.00	0.38	5.00	1.32	0.00	1.32
29.95	2.00	0.38	5.00	1.32	0.00	1.32
30.00	2.00	0.38	5.00	1.32	0.00	1.32
30.05	2.00	0.38	5.00	1.32	0.00	1.32
30.10	2.00	0.38	5.00	1.32	0.00	1.32
30.15	2.00	0.38	5.00	1.32	0.00	1.32
30.20	2.00	0.38	5.00	1.32	0.00	1.32
30.25	2.00	0.38	5.00	1.32	0.00	1.32
30.30	2.00	0.38	5.00	1.32	0.00	1.32
30.35	2.00	0.38	5.00	1.32	0.00	1.32
30.40	2.00	0.38	5.00	1.32	0.00	1.32
30.45	2.00	0.38	5.00	1.32	0.00	1.32
30.50	2.00	0.38	5.00	1.32	0.00	1.32
30.55	2.00	0.38	5.00	1.32	0.00	1.32
30.60	2.00	0.38	5.00	1.32	0.00	1.32
30.65	2.00	0.38	5.00	1.32	0.00	1.32
30.70	2.00	0.38	5.00	1.32	0.00	1.32
30.75	2.00	0.38	5.00	1.32	0.00	1.32
30.80	2.00	0.38	5.00	1.32	0.00	1.32
30.85	2.00	0.38	5.00	1.32	0.00	1.32
30.90	2.00	0.38	5.00	1.32	0.00	1.32
30.95	2.00	0.38	5.00	1.32	0.00	1.32
31.00	2.00	0.38	5.00	1.32	0.00	1.32
31.05	2.00	0.38	5.00	1.32	0.00	1.32
31.10	2.00	0.38	5.00	1.32	0.00	1.32
31.15	2.00	0.38	5.00	1.32	0.00	1.32

31.20	2.00	0.38	5.00	1.32	0.00	1.32
31.25	2.00	0.38	5.00	1.32	0.00	1.32
31.30	2.00	0.38	5.00	1.32	0.00	1.32
31.35	2.00	0.38	5.00	1.32	0.00	1.32
31.40	2.00	0.38	5.00	1.32	0.00	1.32
31.45	2.00	0.38	5.00	1.32	0.00	1.32
31.50	2.00	0.38	5.00	1.32	0.00	1.32
31.55	2.00	0.38	5.00	1.32	0.00	1.32
31.60	2.00	0.38	5.00	1.32	0.00	1.32
31.65	2.00	0.38	5.00	1.32	0.00	1.32
31.70	2.00	0.38	5.00	1.32	0.00	1.32
31.75	2.00	0.38	5.00	1.32	0.00	1.32
31.80	2.00	0.38	5.00	1.32	0.00	1.32
31.85	2.00	0.38	5.00	1.32	0.00	1.32
31.90	2.00	0.38	5.00	1.32	0.00	1.32
31.95	2.00	0.38	5.00	1.32	0.00	1.32
32.00	2.00	0.38	5.00	1.32	0.00	1.32
32.05	2.00	0.38	5.00	1.32	0.00	1.32
32.10	2.00	0.38	5.00	1.32	0.00	1.32
32.15	2.00	0.38	5.00	1.32	0.00	1.32
32.20	2.00	0.38	5.00	1.32	0.00	1.32
32.25	2.00	0.38	5.00	1.32	0.00	1.32
32.30	2.00	0.38	5.00	1.32	0.00	1.32
32.35	2.00	0.38	5.00	1.32	0.00	1.32
32.40	2.00	0.38	5.00	1.32	0.00	1.32
32.45	2.00	0.38	5.00	1.32	0.00	1.32
32.50	2.00	0.38	5.00	1.32	0.00	1.32
32.55	2.00	0.38	5.00	1.32	0.00	1.32
32.60	2.00	0.38	5.00	1.32	0.00	1.32
32.65	2.00	0.38	5.00	1.32	0.00	1.32
32.70	2.00	0.38	5.00	1.32	0.00	1.32
32.75	2.00	0.38	5.00	1.32	0.00	1.32
32.80	2.00	0.38	5.00	1.32	0.00	1.32
32.85	2.00	0.38	5.00	1.32	0.00	1.32
32.90	2.00	0.38	5.00	1.32	0.00	1.32
32.95	2.00	0.37	5.00	1.32	0.00	1.32
33.00	2.00	0.37	5.00	1.32	0.00	1.32
33.05	2.00	0.37	5.00	1.32	0.00	1.32
33.10	2.00	0.37	5.00	1.32	0.00	1.32
33.15	2.00	0.37	5.00	1.32	0.00	1.32
33.20	2.00	0.37	5.00	1.32	0.00	1.32
33.25	2.00	0.37	5.00	1.32	0.00	1.32
33.30	2.00	0.37	5.00	1.32	0.00	1.32
33.35	2.00	0.37	5.00	1.32	0.00	1.32
33.40	2.00	0.37	5.00	1.32	0.00	1.32
33.45	2.00	0.37	5.00	1.32	0.00	1.32
33.50	2.00	0.37	5.00	1.32	0.00	1.32
33.55	2.00	0.37	5.00	1.32	0.00	1.32
33.60	2.00	0.37	5.00	1.32	0.00	1.32
33.65	2.00	0.37	5.00	1.32	0.00	1.32
33.70	2.00	0.37	5.00	1.32	0.00	1.32
33.75	2.00	0.37	5.00	1.32	0.00	1.32
33.80	2.00	0.37	5.00	1.32	0.00	1.32
33.85	2.00	0.37	5.00	1.32	0.00	1.32
33.90	2.00	0.37	5.00	1.32	0.00	1.32
33.95	2.00	0.37	5.00	1.32	0.00	1.32
34.00	2.00	0.37	5.00	1.32	0.00	1.32
34.05	2.00	0.37	5.00	1.32	0.00	1.32
34.10	2.00	0.37	5.00	1.32	0.00	1.32
34.15	2.00	0.37	5.00	1.32	0.00	1.32
34.20	2.00	0.37	5.00	1.32	0.00	1.32
34.25	2.00	0.37	5.00	1.32	0.00	1.32
34.30	2.00	0.37	5.00	1.32	0.00	1.32

34.35	2.00	0.37	5.00	1.32	0.00	1.32
34.40	2.00	0.37	5.00	1.32	0.00	1.32
34.45	2.00	0.37	5.00	1.32	0.00	1.32
34.50	2.00	0.37	5.00	1.32	0.00	1.32
34.55	2.00	0.37	5.00	1.32	0.00	1.32
34.60	2.00	0.37	5.00	1.32	0.00	1.32
34.65	2.00	0.37	5.00	1.32	0.00	1.32
34.70	2.00	0.37	5.00	1.32	0.00	1.32
34.75	2.00	0.37	5.00	1.32	0.00	1.32
34.80	2.00	0.37	5.00	1.32	0.00	1.32
34.85	2.00	0.37	5.00	1.32	0.00	1.32
34.90	2.00	0.37	5.00	1.32	0.00	1.32
34.95	2.00	0.37	5.00	1.32	0.00	1.32
35.00	2.00	0.37	5.00	1.32	0.00	1.32
35.05	2.00	0.37	5.00	1.32	0.00	1.32
35.10	2.00	0.37	5.00	1.32	0.00	1.32
35.15	2.00	0.37	5.00	1.32	0.00	1.32
35.20	2.00	0.37	5.00	1.32	0.00	1.32
35.25	2.00	0.37	5.00	1.32	0.00	1.32
35.30	2.00	0.37	5.00	1.32	0.00	1.32
35.35	2.00	0.37	5.00	1.32	0.00	1.32
35.40	2.00	0.37	5.00	1.32	0.00	1.32
35.45	2.00	0.37	5.00	1.32	0.00	1.32
35.50	2.00	0.37	5.00	1.32	0.00	1.32
35.55	2.00	0.37	5.00	1.32	0.00	1.32
35.60	2.00	0.37	5.00	1.32	0.00	1.32
35.65	2.00	0.37	5.00	1.32	0.00	1.32
35.70	2.00	0.37	5.00	1.32	0.00	1.32
35.75	2.00	0.37	5.00	1.32	0.00	1.32
35.80	2.00	0.37	5.00	1.32	0.00	1.32
35.85	2.00	0.37	5.00	1.32	0.00	1.32
35.90	2.00	0.37	5.00	1.32	0.00	1.32
35.95	2.00	0.37	5.00	1.32	0.00	1.32
36.00	2.00	0.37	5.00	1.32	0.00	1.32
36.05	2.00	0.37	5.00	1.32	0.00	1.32
36.10	2.00	0.37	5.00	1.32	0.00	1.32
36.15	2.00	0.37	5.00	1.32	0.00	1.32
36.20	2.00	0.37	5.00	1.32	0.00	1.32
36.25	2.00	0.37	5.00	1.32	0.00	1.32
36.30	2.00	0.37	5.00	1.32	0.00	1.32
36.35	2.00	0.37	5.00	1.32	0.00	1.32
36.40	2.00	0.37	5.00	1.32	0.00	1.32
36.45	2.00	0.37	5.00	1.32	0.00	1.32
36.50	2.00	0.37	5.00	1.32	0.00	1.32
36.55	2.00	0.37	5.00	1.32	0.00	1.32
36.60	2.00	0.37	5.00	1.32	0.00	1.32
36.65	2.00	0.37	5.00	1.32	0.00	1.32
36.70	2.00	0.37	5.00	1.32	0.00	1.32
36.75	2.00	0.37	5.00	1.32	0.00	1.32
36.80	2.00	0.37	5.00	1.32	0.00	1.32
36.85	2.00	0.37	5.00	1.32	0.00	1.32
36.90	2.00	0.37	5.00	1.32	0.00	1.32
36.95	2.00	0.37	5.00	1.32	0.00	1.32
37.00	2.00	0.37	5.00	1.32	0.00	1.32
37.05	2.00	0.37	5.00	1.32	0.00	1.32
37.10	2.00	0.37	5.00	1.32	0.00	1.32
37.15	2.00	0.37	5.00	1.32	0.00	1.32
37.20	2.00	0.37	5.00	1.32	0.00	1.32
37.25	2.00	0.37	5.00	1.32	0.00	1.32
37.30	2.00	0.37	5.00	1.32	0.00	1.32
37.35	2.00	0.37	5.00	1.32	0.00	1.32
37.40	2.00	0.37	5.00	1.32	0.00	1.32
37.45	2.00	0.37	5.00	1.32	0.00	1.32

37.50	2.00	0.37	5.00	1.32	0.00	1.32
37.55	2.00	0.37	5.00	1.32	0.00	1.32
37.60	2.00	0.37	5.00	1.32	0.00	1.32
37.65	2.00	0.37	5.00	1.32	0.00	1.32
37.70	2.00	0.37	5.00	1.32	0.00	1.32
37.75	2.00	0.37	5.00	1.32	0.00	1.32
37.80	2.00	0.37	5.00	1.32	0.00	1.32
37.85	2.00	0.37	5.00	1.32	0.00	1.32
37.90	2.00	0.37	5.00	1.32	0.00	1.32
37.95	2.00	0.37	5.00	1.32	0.00	1.32
38.00	2.00	0.37	5.00	1.32	0.00	1.32
38.05	2.00	0.37	5.00	1.32	0.00	1.32
38.10	2.00	0.37	5.00	1.32	0.00	1.32
38.15	2.00	0.37	5.00	1.32	0.00	1.32
38.20	2.00	0.37	5.00	1.32	0.00	1.32
38.25	2.00	0.37	5.00	1.32	0.00	1.32
38.30	2.00	0.37	5.00	1.32	0.00	1.32
38.35	2.00	0.37	5.00	1.32	0.00	1.32
38.40	2.00	0.37	5.00	1.32	0.00	1.32
38.45	2.00	0.37	5.00	1.32	0.00	1.32
38.50	2.00	0.37	5.00	1.32	0.00	1.32
38.55	2.00	0.37	5.00	1.32	0.00	1.32
38.60	2.00	0.37	5.00	1.32	0.00	1.32
38.65	2.00	0.37	5.00	1.32	0.00	1.32
38.70	2.00	0.37	5.00	1.32	0.00	1.32
38.75	2.00	0.37	5.00	1.32	0.00	1.32
38.80	2.00	0.37	5.00	1.32	0.00	1.32
38.85	2.00	0.37	5.00	1.32	0.00	1.32
38.90	2.00	0.37	5.00	1.32	0.00	1.32
38.95	2.00	0.37	5.00	1.32	0.00	1.32
39.00	2.00	0.37	5.00	1.32	0.00	1.32
39.05	2.00	0.37	5.00	1.32	0.00	1.32
39.10	2.00	0.37	5.00	1.32	0.00	1.32
39.15	2.00	0.37	5.00	1.32	0.00	1.32
39.20	2.00	0.37	5.00	1.32	0.00	1.32
39.25	2.00	0.37	5.00	1.32	0.00	1.32
39.30	2.00	0.37	5.00	1.32	0.00	1.32
39.35	2.00	0.37	5.00	1.32	0.00	1.32
39.40	2.00	0.37	5.00	1.32	0.00	1.32
39.45	2.00	0.37	5.00	1.32	0.00	1.32
39.50	2.00	0.37	5.00	1.32	0.00	1.32
39.55	2.00	0.37	5.00	1.32	0.00	1.32
39.60	2.00	0.37	5.00	1.32	0.00	1.32
39.65	2.00	0.37	5.00	1.32	0.00	1.32
39.70	2.00	0.37	5.00	1.32	0.00	1.32
39.75	2.00	0.37	5.00	1.32	0.00	1.32
39.80	2.00	0.37	5.00	1.32	0.00	1.32
39.85	2.00	0.37	5.00	1.32	0.00	1.32
39.90	2.00	0.37	5.00	1.32	0.00	1.32
39.95	2.00	0.37	5.00	1.32	0.00	1.32
40.00	2.00	0.37	5.00	1.32	0.00	1.32
40.05	2.00	0.37	5.00	1.32	0.00	1.32
40.10	2.00	0.36	5.00	1.32	0.00	1.32
40.15	2.00	0.36	5.00	1.32	0.00	1.32
40.20	2.00	0.36	5.00	1.32	0.00	1.32
40.25	2.00	0.36	5.00	1.32	0.00	1.32
40.30	2.00	0.36	5.00	1.32	0.00	1.32
40.35	2.00	0.36	5.00	1.32	0.00	1.32
40.40	2.00	0.36	5.00	1.32	0.00	1.32
40.45	2.00	0.36	5.00	1.32	0.00	1.32
40.50	2.00	0.36	5.00	1.32	0.00	1.32
40.55	2.00	0.36	5.00	1.32	0.00	1.32
40.60	2.00	0.36	5.00	1.32	0.00	1.32

40.65	2.00	0.36	5.00	1.32	0.00	1.32
40.70	2.00	0.36	5.00	1.32	0.00	1.32
40.75	2.00	0.36	5.00	1.32	0.00	1.32
40.80	2.00	0.36	5.00	1.32	0.00	1.32
40.85	2.00	0.36	5.00	1.32	0.00	1.32
40.90	2.00	0.36	5.00	1.32	0.00	1.32
40.95	2.00	0.36	5.00	1.32	0.00	1.32
41.00	2.00	0.36	5.00	1.32	0.00	1.32
41.05	2.00	0.36	5.00	1.32	0.00	1.32
41.10	2.00	0.36	5.00	1.32	0.00	1.32
41.15	2.00	0.36	5.00	1.32	0.00	1.32
41.20	2.00	0.36	5.00	1.32	0.00	1.32
41.25	2.00	0.36	5.00	1.32	0.00	1.32
41.30	2.00	0.36	5.00	1.32	0.00	1.32
41.35	2.00	0.36	5.00	1.32	0.00	1.32
41.40	2.00	0.36	5.00	1.32	0.00	1.32
41.45	2.00	0.36	5.00	1.32	0.00	1.32
41.50	2.00	0.36	5.00	1.32	0.00	1.32
41.55	2.00	0.36	5.00	1.32	0.00	1.32
41.60	2.00	0.36	5.00	1.32	0.00	1.32
41.65	2.00	0.36	5.00	1.32	0.00	1.32
41.70	2.00	0.36	5.00	1.32	0.00	1.32
41.75	2.00	0.36	5.00	1.32	0.00	1.32
41.80	2.00	0.36	5.00	1.32	0.00	1.32
41.85	2.00	0.36	5.00	1.32	0.00	1.32
41.90	2.00	0.36	5.00	1.32	0.00	1.32
41.95	2.00	0.36	5.00	1.32	0.00	1.32
42.00	2.00	0.36	5.00	1.32	0.00	1.32
42.05	2.00	0.36	5.00	1.32	0.00	1.32
42.10	2.00	0.36	5.00	1.32	0.00	1.32
42.15	2.00	0.36	5.00	1.32	0.00	1.32
42.20	2.00	0.36	5.00	1.32	0.00	1.32
42.25	2.00	0.36	5.00	1.32	0.00	1.32
42.30	2.00	0.36	5.00	1.32	0.00	1.32
42.35	2.00	0.36	5.00	1.32	0.00	1.32
42.40	2.00	0.36	5.00	1.32	0.00	1.32
42.45	2.00	0.36	5.00	1.32	0.00	1.32
42.50	2.00	0.36	5.00	1.32	0.00	1.32
42.55	2.00	0.36	5.00	1.32	0.00	1.32
42.60	2.00	0.36	5.00	1.32	0.00	1.32
42.65	2.00	0.36	5.00	1.32	0.00	1.32
42.70	2.00	0.36	5.00	1.32	0.00	1.32
42.75	2.00	0.36	5.00	1.32	0.00	1.32
42.80	2.00	0.36	5.00	1.32	0.00	1.32
42.85	2.00	0.36	5.00	1.32	0.00	1.32
42.90	2.00	0.36	5.00	1.32	0.00	1.32
42.95	2.00	0.36	5.00	1.32	0.00	1.32
43.00	2.00	0.36	5.00	1.32	0.00	1.32
43.05	0.24	0.36	0.68*	1.32	0.00	1.32
43.10	0.24	0.36	0.68*	1.31	0.00	1.31
43.15	0.24	0.36	0.68*	1.30	0.00	1.30
43.20	0.24	0.36	0.68*	1.29	0.00	1.29
43.25	0.24	0.36	0.68*	1.29	0.00	1.29
43.30	0.24	0.36	0.67*	1.28	0.00	1.28
43.35	0.24	0.36	0.67*	1.27	0.00	1.27
43.40	0.24	0.36	0.67*	1.26	0.00	1.26
43.45	0.24	0.36	0.67*	1.25	0.00	1.25
43.50	0.24	0.36	0.67*	1.24	0.00	1.24
43.55	0.24	0.36	0.67*	1.23	0.00	1.23
43.60	0.24	0.36	0.67*	1.22	0.00	1.22
43.65	0.24	0.36	0.67*	1.21	0.00	1.21
43.70	0.24	0.36	0.67*	1.20	0.00	1.20
43.75	0.24	0.36	0.67*	1.19	0.00	1.19

43.80	0.24	0.36	0.67*	1.18	0.00	1.18
43.85	0.24	0.36	0.67*	1.17	0.00	1.17
43.90	0.24	0.36	0.67*	1.16	0.00	1.16
43.95	0.24	0.36	0.67*	1.15	0.00	1.15
44.00	0.24	0.36	0.67*	1.15	0.00	1.15
44.05	0.24	0.36	0.67*	1.14	0.00	1.14
44.10	0.24	0.36	0.67*	1.13	0.00	1.13
44.15	0.24	0.36	0.67*	1.12	0.00	1.12
44.20	0.24	0.36	0.67*	1.11	0.00	1.11
44.25	0.24	0.36	0.67*	1.10	0.00	1.10
44.30	0.24	0.36	0.67*	1.09	0.00	1.09
44.35	0.24	0.36	0.67*	1.08	0.00	1.08
44.40	0.24	0.36	0.67*	1.07	0.00	1.07
44.45	0.24	0.36	0.67*	1.06	0.00	1.06
44.50	0.24	0.36	0.67*	1.05	0.00	1.05
44.55	0.24	0.36	0.67*	1.04	0.00	1.04
44.60	0.24	0.36	0.67*	1.03	0.00	1.03
44.65	0.24	0.36	0.67*	1.02	0.00	1.02
44.70	0.24	0.36	0.67*	1.01	0.00	1.01
44.75	0.24	0.36	0.67*	1.00	0.00	1.00
44.80	0.24	0.36	0.67*	1.00	0.00	1.00
44.85	0.24	0.36	0.67*	0.99	0.00	0.99
44.90	0.24	0.36	0.67*	0.98	0.00	0.98
44.95	0.24	0.36	0.67*	0.97	0.00	0.97
45.00	0.24	0.36	0.67*	0.96	0.00	0.96
45.05	0.24	0.36	0.67*	0.95	0.00	0.95
45.10	0.24	0.36	0.67*	0.94	0.00	0.94
45.15	0.24	0.36	0.67*	0.93	0.00	0.93
45.20	0.24	0.36	0.67*	0.92	0.00	0.92
45.25	0.24	0.36	0.67*	0.91	0.00	0.91
45.30	0.24	0.35	0.67*	0.90	0.00	0.90
45.35	0.24	0.35	0.67*	0.89	0.00	0.89
45.40	0.24	0.35	0.67*	0.88	0.00	0.88
45.45	0.24	0.35	0.67*	0.87	0.00	0.87
45.50	0.24	0.35	0.67*	0.86	0.00	0.86
45.55	0.24	0.35	0.67*	0.85	0.00	0.85
45.60	0.24	0.35	0.67*	0.84	0.00	0.84
45.65	0.24	0.35	0.67*	0.84	0.00	0.84
45.70	0.24	0.35	0.67*	0.83	0.00	0.83
45.75	0.24	0.35	0.67*	0.82	0.00	0.82
45.80	0.24	0.35	0.67*	0.81	0.00	0.81
45.85	0.24	0.35	0.67*	0.80	0.00	0.80
45.90	0.24	0.35	0.67*	0.79	0.00	0.79
45.95	0.24	0.35	0.67*	0.78	0.00	0.78
46.00	0.24	0.35	0.67*	0.77	0.00	0.77
46.05	0.24	0.35	0.67*	0.76	0.00	0.76
46.10	0.23	0.35	0.67*	0.75	0.00	0.75
46.15	0.23	0.35	0.67*	0.74	0.00	0.74
46.20	0.23	0.35	0.66*	0.73	0.00	0.73
46.25	0.23	0.35	0.66*	0.72	0.00	0.72
46.30	0.23	0.35	0.66*	0.71	0.00	0.71
46.35	0.23	0.35	0.66*	0.70	0.00	0.70
46.40	0.23	0.35	0.66*	0.69	0.00	0.69
46.45	0.23	0.35	0.66*	0.68	0.00	0.68
46.50	0.23	0.35	0.66*	0.67	0.00	0.67
46.55	0.23	0.35	0.66*	0.66	0.00	0.66
46.60	0.23	0.35	0.66*	0.66	0.00	0.66
46.65	0.23	0.35	0.66*	0.65	0.00	0.65
46.70	0.23	0.35	0.66*	0.64	0.00	0.64
46.75	0.23	0.35	0.66*	0.63	0.00	0.63
46.80	0.23	0.35	0.66*	0.62	0.00	0.62
46.85	0.23	0.35	0.66*	0.61	0.00	0.61
46.90	0.23	0.35	0.66*	0.60	0.00	0.60

46.95	0.23	0.35	0.66*	0.59	0.00	0.59
47.00	0.23	0.35	0.66*	0.58	0.00	0.58
47.05	0.23	0.35	0.66*	0.57	0.00	0.57
47.10	0.23	0.35	0.66*	0.56	0.00	0.56
47.15	0.23	0.35	0.66*	0.55	0.00	0.55
47.20	0.23	0.35	0.66*	0.54	0.00	0.54
47.25	0.23	0.35	0.66*	0.53	0.00	0.53
47.30	0.23	0.35	0.66*	0.52	0.00	0.52
47.35	0.23	0.35	0.66*	0.51	0.00	0.51
47.40	0.23	0.35	0.66*	0.50	0.00	0.50
47.45	0.23	0.35	0.66*	0.49	0.00	0.49
47.50	0.23	0.35	0.66*	0.48	0.00	0.48
47.55	0.23	0.35	0.66*	0.47	0.00	0.47
47.60	0.23	0.35	0.66*	0.46	0.00	0.46
47.65	0.23	0.35	0.66*	0.45	0.00	0.45
47.70	0.23	0.35	0.66*	0.44	0.00	0.44
47.75	0.23	0.35	0.66*	0.44	0.00	0.44
47.80	0.23	0.35	0.66*	0.43	0.00	0.43
47.85	0.23	0.35	0.66*	0.42	0.00	0.42
47.90	0.23	0.35	0.66*	0.41	0.00	0.41
47.95	0.23	0.35	0.66*	0.40	0.00	0.40
48.00	0.23	0.35	0.66*	0.39	0.00	0.39
48.05	0.23	0.35	0.66*	0.38	0.00	0.38
48.10	0.23	0.35	0.66*	0.37	0.00	0.37
48.15	0.23	0.35	0.66*	0.36	0.00	0.36
48.20	0.23	0.35	0.66*	0.35	0.00	0.35
48.25	0.23	0.35	0.66*	0.34	0.00	0.34
48.30	0.23	0.35	0.66*	0.33	0.00	0.33
48.35	0.23	0.35	0.66*	0.32	0.00	0.32
48.40	0.23	0.35	0.66*	0.31	0.00	0.31
48.45	0.23	0.35	0.66*	0.30	0.00	0.30
48.50	0.23	0.35	0.66*	0.29	0.00	0.29
48.55	0.23	0.35	0.66*	0.28	0.00	0.28
48.60	0.23	0.35	0.66*	0.27	0.00	0.27
48.65	0.23	0.35	0.66*	0.26	0.00	0.26
48.70	0.23	0.35	0.66*	0.25	0.00	0.25
48.75	0.23	0.35	0.66*	0.24	0.00	0.24
48.80	0.23	0.35	0.66*	0.23	0.00	0.23
48.85	0.23	0.35	0.66*	0.22	0.00	0.22
48.90	0.23	0.35	0.66*	0.21	0.00	0.21
48.95	0.23	0.35	0.66*	0.20	0.00	0.20
49.00	0.23	0.35	0.66*	0.19	0.00	0.19
49.05	0.23	0.35	0.66*	0.18	0.00	0.18
49.10	0.23	0.35	0.66*	0.17	0.00	0.17
49.15	0.23	0.35	0.66*	0.17	0.00	0.17
49.20	0.23	0.35	0.66*	0.16	0.00	0.16
49.25	0.23	0.35	0.66*	0.15	0.00	0.15
49.30	0.23	0.35	0.66*	0.14	0.00	0.14
49.35	0.23	0.35	0.66*	0.13	0.00	0.13
49.40	0.23	0.35	0.66*	0.12	0.00	0.12
49.45	0.23	0.35	0.66*	0.11	0.00	0.11
49.50	0.23	0.35	0.66*	0.10	0.00	0.10
49.55	0.23	0.35	0.66*	0.09	0.00	0.09
49.60	0.23	0.35	0.66*	0.08	0.00	0.08
49.65	0.23	0.35	0.66*	0.07	0.00	0.07
49.70	0.23	0.34	0.66*	0.06	0.00	0.06
49.75	0.23	0.34	0.66*	0.05	0.00	0.05
49.80	0.23	0.34	0.66*	0.04	0.00	0.04
49.85	0.23	0.34	0.66*	0.03	0.00	0.03
49.90	0.23	0.34	0.66*	0.02	0.00	0.02
49.95	0.23	0.34	0.66*	0.01	0.00	0.01
50.00	0.23	0.34	0.66*	0.00	0.00	0.00

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2,   CSR is limited to 2)

Units   Depth = ft, Stress or Pressure = tsf (atm), Unit Weight = pcf, Settlement = in.

CRRm	Cyclic resistance ratio from soils
CSRfs	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRfs
S_sat	Settlement from saturated sands
S_dry	Settlement from dry sands
S_all	Total settlement from saturated and dry sands
NoLiq	No-Liquefy Soils